MEDICARE HOSPICE BENEFIT PROGRAM EVALUATION

FINAL SUMMARY REPORT

July 21, 1989

David Kidder
Katie Merrell
Daniel Dohan

Abt Associates Inc., Cambridge, Massachusetts

Abt Associates Inc.
55 Wheeler Street • Cambridge • Massachusetts 02138-1168
Telephone: (617) 492-7100
Fax: (617) 492-5219

NTIS Accession #
PB 90-150053

MEDICARE HOSPICE BENEFIT PROGRAM EVALUATION

FINAL SUMMARY REPORT

July 21, 1989

David Kidder
Katie Merrell
Daniel Dohan

Submitted to:

Feather Davis, Ph.D.
Program Evaluation Branch
Division of Beneficiary Studies
Office of Research
Health Care Financing Administration
Baltimore, MD 21207

TABLE OF CONTENTS

Acknowledgements

The authors wish to thank our HCFA Project Officer, Dr. Feather Davis, who provided the thoughtful review and patient day-to-day assistance that helped make this study a pleasure to conduct. Dr. Paul Eggers was a source of constructive, helpful criticism and good insight throughout the study. Tom Hoyer, Winona Hocutt and Randy Richter read and reviewed various reports and helped us clarify policy and cost-reporting issues. More generally, we want to thank the many individuals in ORD, BDMS and BERC who helped along the way.

Among our AAI colleagues, we thank Elizabeth Axelrod, who managed the project data base, Cathy Glick, who did most of the programming to create analysis files and Anna Piacitelli, who typed the final report. Deborah Lee and Georgette Wright also contributed significantly in the first year of the study.

Our colleagues, Vince Mor and Susan Masterson-Allen of Brown University produced thorough syntheses of the research literature on hospice care each year of the project. David Klingman, of SysteMetrics, conducted a study of Medicaid expenditures for the care of terminally-ill individuals. Bettye Arrington, of Jack Martin and Company was always helpful, providing us with data collected from Jack Martin and Company's study of non-certified hospice providers and patients.

MEDICARE HOSPICE BENEFIT PROGRAM EVALUATION
FINAL SUMMARY REPORT

EXECUTIVE SUMMARY

INTRODUCTION

The Medicare Hospice Benefit, enacted as part of the Tax Equity and Fiscal Responsibility Act of 1982, was implemented in November, 1983. This report presents findings from a study of the cost-effectiveness and fairness of the Benefit, based on data from the first three years, FY84 through FY86.

The number of hospices in the United States has grown from roughly 235 in 1980 to over 1700 by 1985. Hospices have gained acceptance, from the public and from medical professionals, as the hospice industry worked to define hospice care more consistently.

The Medicare Hospice Benefit made available both a source of funds and a set of structural standards and criteria for hospices that gained Medicare certification. Prospective per diem rates were set for home care (routine and continuous skilled nursing care) and inpatient care (general and respite). A budget ceiling was established, based on non-hospice costs of treating terminally-ill Medicare cancer patients, and a limit was imposed on the percent of total days provided that could be in inpatient settings (twenty percent). Beneficiaries were limited to three Benefit periods (two 90-day and one 30-day periods). While enrolled, Beneficiaries had to give up their rights to other Medicare Parts A and B payments for any services directly related to their terminal conditions. Certified hospices were required both to provide nursing and counseling directly and to make formal arrangements to provide other types of care, particularly inpatient services.

Since its implementation, the Benefit has been altered by Congress. The principal changes were $10 per diem increases in the four prospective payment rates and elimination of a "sunset" provision, that would have terminated the program in 1986. As part of the Catastrophic Coverage Act, the limitation in Medicare Benefit payments to a maximum of 210 days per beneficiary was removed.

The first published report of this Evaluation described Beneficiaries' reimbursement and utilization during FY84 and FY85, completed analyses of out-of-pocket spending and non-Medicare patterns of expenditure in hospice, reported on findings of a study of Medicaid expenditures for the care of terminally-ill patients and presented a preliminary estimate of the savings to Medicare associated with the Benefit. In addition, a review and synthesis of the literature on hospice and terminal illness was completed and published.[1]

In a separate study, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) addressed questions of quality and access, and the nature of hospice care (JCAHO, 1985). The JCAHO and other research show that as the hospice industry has grown, providers have increasingly adopted a "medical model," relying less on volunteerism and more on medical professionalism in managing and delivering services. The hospice intervention has been shown to be superior to non-hospice interventions in supporting family and other caregivers during bereavement, but has shown little or no advantage in providing pain and symptom control and non-bereavement counseling. Clinical views on the appropriate use of drugs and other therapies to control pain and symptoms vary widely within the hospice industry.[2] Patient access to hospice has never been systematically studied. A variety of funding sources have contributed to hospice patients' care, but a thorough accounting of who pays for hospice care has yet to be made.

This report addresses the following general questions:

- How has the Medicare Hospice Benefit affected the hospice industry?

- Is hospice care, as currently reimbursed by Medicare, a cost effective alternative to more aggressive or less intensive non-hospice interventions? What explains differences in hospice and non-hospice expenditures?

- What would be the effect on the Medicare program of certain changes in the Benefit?

---

[1]U.S. Department of Health and Human Services. Health Care Financing Administration. Medicare Hospice Benefit Program Evaluation. Health Care Financing Extramural Report. Baltimore, MD. September, 1987.

[2]Much of recent hospice research is summarized in V. Mor. Hospice Care Systems, New York: Springer Publishing Co. 1987.

MEDICARE AND THE HOSPICE INDUSTRY

The size and composition of the U.S. hospice industry has not been fully documented. This Evaluation focuses on certain characteristics of Medicare certified hospices and of a sample of non-certified hospices selected for comparison.

Growth of Medicare Certified Hospices

The number of hospices that HCFA certified to provide services under the Hospice Benefit grew rapidly between FY84 and FY88, at an average annual rate of nearly 40 percent. Certified hospices were estimated to constitute about 20 percent of all hospice providers in FY85; that share has grown to 25 percent or more.

HCFA classifies certified hospices by their relation to other certified health care providers. Programs affiliated with Medicare-certified hospitals, skilled nursing facilities and home health agencies are classified as hospital-based, SNF-based and HHA-based hospices. Programs with no such affiliation are classified as freestanding hospices. The geographical distribution of certified hospices has remained fairly stable, with the largest percentage of certified hospices located in the East, particularly in the Middle Atlantic states. The proportion of freestanding hospices was higher in the South Atlantic states, whereas most hospital-based and SNF-based hospices located in the East North Central states.

Although HHA-based hospices still make up the largest group by type of certified hospices, freestanding providers increased their share, from 28 to 34 percent, between FY84 and FY86. The average Hospice Beneficiary census in freestanding hospices also increased, relative to the provider-based programs.

A hospice's organizational type and region may affect its practice patterns; timing of certification may also be important in this regard, because of changes in the Benefit over time, and because recently-certified hospices may behave differently, perhaps out of unfamiliarity with the Benefit. A majority of certifications awarded in FY85 were for HHA-based providers. Freestanding hospices dominated certification activities in FY86.

The Costs and Benefits of Certification

Provider decisions to apply for certification, and to enroll and submit claims for Hospice Beneficiaries are affected by market level factors, by the experience of hospices that have attained certification and by perceptions of the financial and non-financial gains associated with this decision.

Market Factors Affecting Certification. In general, counties that attracted certified hospices tended to be larger, more densely populated, better provided with specialized health care technologies and physician specialists than counties with no certified hospices. In a test of factors associated with location of certified hospice providers, the supplies of hospital and skilled nursing facility beds were negatively related to the probability of certification, controlling for other influences. This suggests that areas with potential "overbedding" were poor candidates for certified hospices.

The Financial Implications of Certification. The financial gains or losses associated with certification were studied through accounting cost data, reported directly to HCFA by certified providers and collected from a sample of non-certified hospices by Jack Martin and Company. Caveats regarding the interpretation of these data are in order. Cost report data were available only for a non-random sample of certified providers, because not all providers submitted reports, and because some reports in each year were unusable. The non-certified hospice sample was randomly selected, from a sample frame of hospices designed to include providers similar in organizational structure to certified hospices.

Certified hospices that submitted cost reports in FY85 and FY86 appear to be larger than non-certified (166 total census of Medicare and other patients in FY86, compared to 84). Average daily costs in certified hospices were also lower, from $3 to $10 per diem on average in FY85 and FY86. Costs per discharge were considerably lower in certified hospices than in non-certified hospices, in part because total patient days per discharge were lower.

Medicare certification appears to have benefited many providers. Certified hospices that submitted cost reports generally enjoyed positive and increasing net Medicare revenues over the study period. Total Medicare

margins (total Medicare revenues minus Medicare costs, divided by Medicare revenues) were estimated to have averaged 18 percent (FY85) and 22 percent (FY86). Eighty-six percent of this group of providers were "winners," in the sense that they earned positive net revenues from the Medicare program. It should be noted that these averages conceal the minority of hospices which suffered large losses, up to 30 percent or more measured by total margin. Most did reasonably well, however. **Moreover,a simulation suggests that the sample of non-certified hospices would have done well also, with three-quarters expected to have earned positive net revenues had they participated in the Hospice Benefit.** This percentage would have increased between FY85 and FY86 for all but hospital-based providers.

Certified hospices were generally able to earn positive net revenues while conforming to reimbursement and inpatient day limits in the Hospice Benefit program. None exceeded the reimbursement cap in FY85; the one that exceeded the cap in FY86 did so on the basis of only one claim. About 8 percent exceeded the inpatient day limit in FY85. By FY86, only 4 percent exceeded the inpatient day limit.

In spite of this evidence for financial gain within the Benefit, a survey of non-certified hospice adiminstrators conducted before the FY86 rate increase took effect showed that a majority of "independent" (freestanding) and hospital-based hospices considered low payment rates to be an important factor in their decisions not to seek certification. Community-based (HHA-based) hospices were more likely to cite the costs of adhering to core service requirements.

Medicare Certified Hospice Charge/Reimbursement Patterns. Certified hospice charge-setting, relative to reimbursement for Medicare beneficiaries, was examined to see if charge/reimbursement ratios reflect expected gains or losses under the Benefit. Descriptive statistics suggested that hospital- and HHA-based hospices, set charge/reimbursement rates higher than freestanding and SNF-based providers. However, in an analysis that adjusted for date of provider certification, region and the "intensity mix" of hospice days, these differences disappear.

THE IMPACT OF THE HOSPICE BENEFIT ON MEDICARE

In FY86, Benefit payments of around $20 million were still a small part (less than one percent) of total Medicare Part A expenditures, nearly $50 billion for hospital, nursing home and home health care. Nonetheless, because the program has shown potential for rapid growth, it is appropriate to ask how much Medicare paid for Beneficiaries' care in hospice, and whether or not a case can be made that the Benefit has been cost effective for Medicare.

Most analyses of reimbursements and utilization were conducted on a Beneficiary-level data file, including Hospice Beneficiaries with complete claims data after enrollment: 1,584 in FY84, 4,710 in FY85 and 10,510 in FY86. A slightly larger file, including all Beneficiaries with valid dates of enrollment and death, was used to analyze length of enrollments.

Total Benefit and Regular Part A Expenditures for Hospice Beneficiaries

Total Medicare hospice and Part A expenditures for Hospice Beneficiaries, after enrollment in the program, increased from FY84 to FY86 at a rate somewhat above the annual rate of inflation. Total hospice payments per beneficiary after enrollment increased 22 percent, from $1,857 in FY84 to $2,261 in FY86. **Total hospice plus Part A expenditure per Hospice Beneficiary after enrollment (including gaps in Benefit use) was $2,336 in FY86.**

Trends in average Hospice Benefit charges showed increases for routine home care, and decreases for general inpatient and continuous home care, from FY84 to FY86. Changes in the composition of Benefit payments did not appear to reflect changes in the demographic and medical characteristics of Hospice Benefit patients.

When reimbursements per beneficiary were compared across provider types, Beneficiaries using freestanding hospices were shown to be less expensive to Medicare than Beneficiaries enrolled in provider-based hospices. This generalization held both for unadjusted comparisons and, less strongly, for comparisons adjusted for the potentially confounding effects of patient mix, prior utilization and length of enrollment. For example, the unadjusted difference between hospital-based and freestanding reimbursements per Beneficiary was $1,010. With adjustment, the difference declined to $317.

Length of Enrollment

Average lengths of enrollment in the Hospice Benefit did not differ greatly among freestanding, hospital-based and HHA-based hospices, ranging from 34 to 37 days in FY86; average SNF-based enrollments were considerably longer, at 43 days. The number, and to some extent the percentage, of Beneficiaries enrolled who left the program increased over the study period. The share of this group in the Beneficiary population increased from 6 to 7 percent, between FY85 and FY86.

Patterns of enrollment by patient characteristic have remained relatively unchanged over time. The very old (and the relatively young) had longer average stays than the 65 to 74 year age group. Women stayed longer in the Hospice Benefit program than men. Patients who died in hospice had shorter enrollment periods than those who left and died out of the program. The cancer/non-cancer pattern is unclear. In FY85, cancer patients stayed an average of two days more than non-cancer patients. In FY86, non-cancer patients were enrolled over three days longer than cancer patients.

It is difficult to say whether or not lengths of enrollment have increased or decreased since the Hospice Benefit was implemented. The timing of provider entry, and measurement conventions that were used to compare Beneficiary cost and utilization across the three years of the study mean that apparent increases (that are seen when Beneficiaries who died in each fiscal years are the unit of analysis) or decreases (when Beneficiaries who enrolled in each year are the unit) are partly artificial, based on measurement rules and not evidence of real changes in behavior. An estimate of the average length of enrollment that adjusted for these problems, using categorical variables to capture the unique patterns for each provider and correcting for distortions in enrollment caused by cutting off observations at FY86, showed changes that differed among provider types. Average enrollments probably increased somewhat between FY84 and FY85 for freestanding hospices, but remained the same or fell slightly for the other hospice types. Between FY85 and FY86, only estimates for hospital-based providers yielded statistically

significant results, and they suggested that length of enrollment fell.[1]

Patterns of Utilization

Over the last two years of the Evaluation, a large and growing percentage of Hospice Beneficiaries used some routine home care while enrolled (increasing from 89 to 92 percent), while use of general inpatient and continuous home care declined, from 28 to 24 percent, and from 11 to 8 percent respectively.

The inpatient fraction of total enrolled days fell also, on average and among Hospice Beneficiaries who used inpatient services. The relatively small percentage of Beneficiaries who used only inpatient services declined (from 10 to 7 percent), while the larger percentage who used all home care services increased (from 68 to 72 percent). It is noteworthy that the most dramatic decreases in the frequency and level of inpatient utilization occurred among Beneficiaries in hospital-based and, to a lesser extent, SNF-based hospice programs. Among patients in freestanding and HHA-based hospices, inpatient utilization remained nearly constant or declined slightly.

The Net Costs of the Hospice Benefit

Past research has shown hospice to be less costly than conventional care, particularly within the last month of life. However, critics have argued that beneficiaries who select hospice are different from non-hospice patients, a fact which biases estimates of the net costs of hospice care. In particular, data from the National Hospice Study have been used to suggest that hospice patients have longer average illnesses than conventional care patients.[2]

---

[1]Shorter stays could reflect changes in hospital discharge policies after implementation of the Prospective Payment System, with a higher probability that patients would be discharged from the hospital to its affiliated hospice program, to die as Hospice Beneficiaries.

[2]V. Mor and D. Greer, eds. The Hospice Experiment. Baltimore, the Johns Hopkins University Press. 1988.

This Evaluation measured the net cost of hospice with and without adjustment for patient and provider characteristics. In addition, the broader impact of the Hospice Benefit on Medicare spending for the care of terminally-ill cancer patients was estimated. A deliberate attempt was made to select a comparison group of conventional care patients that would fairly represent utilization patterns of the population of terminally-ill Medicare beneficiaries. Conventional care patients[1] were selected if they had any of the relevant cancer or non-cancer diagnoses (based on an inpatient stay) within the last two years of life, to meet the criticism that sampling based on utilization during the last 6 months over-selects high cost, advanced stage conventional care patients. Although the differences in lengths of illness between Hospice Beneficiaries and conventional care patients were less than they were in the National Hospice Study, more conventional care than hospice patients appear to have been diagnosed within a month or less of death. Twenty percent of conventional care patients, compared to 14 percent of hospice patients, appear to have been diagnosed within a month or less of death.

Despite these efforts the analyses produced ambiguous results, in tests of the savings potential of the Hospice Benefit. The only unambiguous finding was the cost savings to Medicare of freestanding hospices, compared to net additional costs generated in provider-based hospices.

The Benefit Election Decision. Benefit enrollees were somewhat different from conventional care patients in other respects as well. In an estimate of the odds of selecting the Hospice Benefit, it was found that very elderly patients were less likely to choose the Benefit, that those with prior Part A inpatient or home health utilization were more likely to choose the Benefit, and that the chances of Benefit selection were higher for prostate, colon, breast and lung cancer patients than for patients with other cancer diagnoses.

Hospice/Conventional Care Cost Differences. Comparisons of Hospice Benefit and conventional care expenditures unadjusted for patient mix showed conventional care to be more expensive in the last month of life, by 30

[1]Conventional care may include non-hospice beneficiaries, and Medicare beneficiaries in non-certified hospice programs.

percent in FY85 and 43 percent in FY86. Hospice Beneficiaries incurred costs that were higher than or no different from conventional care in earlier months. **Medicare Beneficiaries with a non-cancer principal diagnosis were less expensive to care for in hospice than in conventional care**, even though Hospice Beneficiaries with non-cancer diagnoses were more expensive than Beneficiaries with cancer diagnoses. In the last month of life, a non-cancer Hospice Beneficiary cost $3,135, compared to $3,069 for a cancer Beneficiary in FY86. Hospice was a less costly alternative than conventional care, however, in which non-cancer patients averaged $4,730 in the last month of life.

The Hospice Beneficiary with a cancer diagnosis who died at home or in an inpatient setting was more expensive than his/her conventional care counterpart in the last month of life. In fact, Hospice Beneficiaries who died in an inpatient setting incurred very high expenditures in the last month of life, $5,998 compared to $5,573 for conventional care patients who died in a hospital. The Beneficiary who died at home cost $2,656 in the last month, compared to $1,537 for a conventional care patient who died at home. **The hospice cost advantage comes from the fact that there were relatively more Hospice Beneficiaries who died at home (88 percent, compared to 37 percent of conventional care patients), the less costly option for both types of care.**

<u>An Actuarial Approach to Estimating Net Benefit Costs</u>. Unadjusted comparisons of Medicare reimbursements for Hospice Beneficiaries and conventional care patients with cancer diagnoses, over the last seven months of life, suggest that **Medicare broke even by having the Benefit available. Average savings were estimated to be about $1.04 for every dollar spent per diem for a Hospice Beneficiary.** In response to concerns that too many of the conventional care sample members with very short lengths of illness could not have (or would have been unlikely to) select the Benefit were it available, the net costs were reestimated, excluding all patients whose diagnoses were completed within two weeks of death. Savings declined, as expected, from $1.04 to $1.03. Levels of overall savings were due entirely to leverage from freestanding and HHA-based Beneficiaries, for whom savings were estimated to be strongly positive, though declining from FY85 to FY86. Hospital-based and SNF-based Beneficiaries incurred net costs.

Adjusted Estimates of the Net Cost of the Hospice Benefit. Estimates of Benefit net costs, adjusted for several patient mix characteristics, suggested that **the Hospice Benefit generated net savings in the last month of life, for Hospice Beneficiaries with up to five months' enrollment.** For Beneficiaries with more than one month enrollments, earlier months tended to show net costs, or no statistically significant difference in costs between Beneficiaries and conventional care patients. A weighted average of adjusted savings estimates suggested an overall net saving of $1.26 for every dollar spent. **As was the case for unadjusted estimates, freestanding hospice Beneficiaries were most cost effectively served in the Benefit compared to provider-based Beneficiaries, particularly in the last month of life.**

The Impact of the Medicare Hospice Benefit at the County Level. A third test estimated the Hospice Benefit impact on Medicare, using aggregate, county-level Part A expenditures for terminally-ill patients in the last year of life. **Two measures of Hospice Benefit penetration were constructed,** the "presence" of the Benefit (one or more certified hospice program in the county) and the relative penetration of the Benefit (the total number of hospice patient days among terminally-ill Medicare cancer beneficiaries in the county). **In a statistical test, neither measure showed a significant effect of the Hospice Benefit on Medicare expenditure, once estimates were adjusted for demographic and health resource availability measures.**

Total Medicare Part A and B Expenditure. All of the statistical tests of Benefit impact reported so far use only Part A data. Part B data for FY85 Beneficiaries and conventional care patients were acquired and used comparatively, although they were available only as yearly aggregates making them unsuitable for a rigorous monthly savings analysis.

The average conventional care patient in the FY85 Evaluation sample incurred $350 more Part B expenditure in the last year of life than the average Hospice Beneficiary. However, SNF-based Hospice Beneficiaries incurred more Part B expenditure than other Hospice Beneficiaries and conventional care patients alike.

There was some evidence that the Benefit substituted for Part B expenditure, because **each additional Hospital Benefit enrollment day was associated with a $10 decrease in total annual Part B payment,** after adjusting for patient mix, hospice type and region.

Conventional care patients cost $712 more than Hospice Benefit patients in the last year of life in combined Part A and B expenditure. However, after adjustment for patient mix and region, this difference virtually disappears.

THE FUTURE OF THE MEDICARE HOSPICE PROGRAM

Payment rates under the Medicare Hospice Benefit were set by HCFA using data from the Medicare hospice demonstration. Both HCFA and hospice providers lacked historical cost data, to evaluate the fairness of the rates. Since the implementation of the Benefit, rates have been increased by $10 per diem, and other aspects of the Benefit, such as the 210-day limit, have been altered.

The impact on Medicare of actual and potential changes in the Hospice Benefit, and in supply and demand in the hospice industry, was projected through FY92, using a model that describes supply, demand and their implications for Medicare utilization and reimbursement. Projections were compared to a "baseline" forecast, that assumed demand, inflation, and the supply of hospice services would grow at historical average rates, and utilization rates for hospice and non-hospice services would remain unchanged from FY86. A slightly longer average length of enrollment was assumed, to allow for the immediate effects of the removal of the 210-day Benefit limit. It was assumed that average enrollment for those staying more than 210 days would be 300 days. The baseline forecast generates a very small net saving for FY85 of $1.86 million, roughly 0.0019 percent of total estimated Part A and B expenditure for the care of terminally-ill Medicare cancer patients in the last year of life. Savings disappear in this scenario by FY92, to be replaced by a small net cost of $440 thousand. Total Benefit payments in FY92 are predicted to be $28.1 million.

Rate Modification. Rate increases in FY86 altered the distribution of payments among hospice types. Freestanding hospices, whose patients utilize routine home care intensively gained most relative to other types, because the proportional effect of the $10 increase was largest for routine home care.

Because no increases in rates have been implemented since FY86, the "profitability" of certified providers, discussed earlier, has probably diminished. For example, if FY86 provider costs are trended forward at the annual rate of inflation, their average cost of providing routine home care in FY88 would exceed the current national average per diem for home care by $3.37.

Hospice Services. The costs of specific hospice services have been of some concern. Outpatient drugs had been folded into initial per diem rates for home care by HCFA, on the assumption that daily costs would average $0.95 per home day. In fact, daily costs have averaged about $9 for outpatient drugs. However, hospices have not taken advantage of their legal right to collect a 5 percent copayment for outpatient drugs.

The range of costs for bereavement and dietary/nutritional counseling has been wide during the first three years of the Benefit, as during the Medicare hospice demonstration. Few hospices report dietary/nutritional counseling costs, and the average per patient was only $10 in FY85 and $3 in FY86. Bereavement counseling costs were reasonably stable, at an average of $80 per patient over the three years. Cost report data do not strongly support a case for separately reimbursing these services.

The General Inpatient Care Rate. The current inpatient payment rate of $281 falls well short of the average for a comparison group of non-certified hospices. There is reason to believe that it would also prove inadequate for hospices that sought reimbursement under Medicare or Medicaid for serving AIDS patients. A hypothetical increase in the rate, to $500, would possibly encourage more applications for certification and more accurately relfect the true costs of high-utilization patients such as AIDS victims. Under this scenario, total FY92 Benefit payments would be $109.77 million, compared to the baseline $85.32 million. Net costs to the program would be $24.89 million, rather than the baseline estimate of $440 thousand. The higher net costs are still a relatively small percentage of total Medicare spending on terminally-ill cancer patients, roughly 0.14 percent.

Access Enhancement. Various modifications to the Benefit to enhance access have been suggested: eliminating the total reimbursement cap, paying for the services of primary care persons, modifying the six-month prognosis requirement, removing or modifying the core services requirement and removing the limit on total inpatient days.

Any of these changes might increase the demand for hospice services. If the Benefit share of total terminally-ill Medicare cancer patients doubles above the baseline projection for FY92, total Benefit outlays would be $170.65 million, assuming hospice industry capacity expands to accommodate the increased demand. Net costs under this scenario would be about $1.14 million.

An increase in service needs of enrollees could also affect expenditures. **If the average provider had to increase the inpatient proportion of patient days to the allowed maximum of 20 percent, the net costs to Medicare of the Hospice Benefit would be $15.56 million in FY92, compared to a baseline $440 thousand.**

Paying for primary care person (PCP) services would probably not generate much additional cost to the program. National Hospice Study data suggest that, using an "opportunity cost" model to estimate foregone earnings of PCPs who reduce outside work to care for patients, the average PCP should be compensated $500; the actual "expected payment" would be less, (between $75 and $100), because not all patients live alone and have need for paid PCP services. **Additional costs to Medicare in FY92 would be about $1.8 million. Net costs of the Hospice Benefit would increase above baseline, from $440 thousand to $2.0 million.**

Provider Response. Eliminating the inpatient day limit can have a dramatic effect on Benefit outlays, depending upon the extent to which real changes in practice occur. As noted earlier, few hospices have had difficulty staying well below the 20 percent cap. A series of simulations, ranging from operation at 20 percent to an unrealistic 80 percent show net costs ranging from $15.56 million to $137.49 million, well above the baseline estimate of $440 thousand for FY92.

A change in the distribution of certified hospices by type can also affect Benefit payments. A relative increase in high-capacity freestanding hospices will increase net and total costs, even though average costs have been lower among freestanding hospice patients.

Changes in Non-Hospice Utilization and Reimbursement. Because the Benefit will continue to attract a small percentage of eligible Medicare beneficiaries (unlikely to be higher than 6 percent over the next 5 years), **changes in utilization and reimbursement for non-hospice services will probably have the most leverage on the relative cost advantage of the Benefit.**

For example, a decline in regular Part A hospital admission rates can dramatically increase the net costs of the Hospice Benefit. Lowering admission rates for terminally-ill conventional care patients from 0.23 per month to 0.22 increases expected net costs from $440 thousand to $19.06 million. If the rate were to drop to 0.205 (the FY86 regular Part A rate for Hospice Beneficiaries), net costs would grow to $46.98 million.

In contrast, continued increases in Medicare-reimbursed home health care for conventional care patients would increase the Hospice Benefit cost advantage. An increase, from the current 1.021 visits per month to 2.0 visits would produce net savings for the Benefit of $1.11 million in FY92.

Lower Part A inpatient reimbursement rates would increase the net costs of the Benefit. For example, if the average conventional care patient incurred reimbursements per admission of $4,358 (the average for freestanding hospice patients) instead of $6,616, the net cost of the Benefit would increase to $27.63 million. Hospital/SNF-based patients incurred Part B payments that were $959 less than conventional care patients. If conventional care patients were assumed to incur these lower costs, the net cost of the Benefit would be $21.05 million in FY92.

Conclusion

This Evaluation found no evidence that the Medicare Hospice Benefit was a source either of dramatically increased costs or of significant savings to the Medicare program during the period studied. Providers that sought certification seem to have done well financially within the program, although there is evidence that inflation and frozen payment rates may have erased initial net revenue gains. Major rate increases do not appear to be needed to protect existing certified providers or to encourage new applicants. However, adjustments for cost inflation would probably be appropriate.

Certified hospices clearly contributed to stabilizing Medicare expenditures by providing a home-oriented alternative during the last month of life. Although this is desirable from a cost standpoint, there are unanswered questions about the potential effects on access to and quality of care under this model of hospice treatment.

MEDICARE HOSPICE BENEFIT PROGRAM EVALUATION
FINAL SUMMARY REPORT

CHAPTER 1

INTRODUCTION

Congress enacted the Medicare Hospice Benefit, as part of the Tax Equity and Fiscal Responsibility Act of 1982; provisions of the legislation were implemented in November, 1983. Three contracts were issued by the Health Care Financing Administration (HCFA) to evaluated the Benefit. Abt Associates Inc. (AAI) received a contract to evaluate the cost-effectiveness and fairness of the Benefit.[1] This report presents findings from data gathered over the first three years of the Benefit, FY48 through FY86.

Over the last ten years, hospice has become a real alternative for terminally-ill individuals and their families. Hospice services are now available nationwide, in every state, in both rural and urban areas. Simple annual rates of growth, from the late 1970's to the middle of the 1980's have been staggering. In 1980, the first of several annual surveys conducted by the National Hospice Organization identified 235 operational hospices. More recent estimates range as high as 1,694 operational hospice programs (McCann, 1985). In striving to gain acceptance, from medical professionals and other providers of services, from potential users, from public and private payers and from organizations that certify and accredit medical institutions, some within the hospice industry have championed a medical model of hospice. This model meets certain standards and criteria long associated with traditional providers: minimum requirements for nursing coverage, management under a medical professional, strict separation of medical and psychosocial functions, well-defined and accepted qualifications for professional staff.

---

[1]Jack Martin and Company received a contract to collect and analyze cost report data from a sample of non-certified hospices. The Joint Commission on Accreditation of Healthcare Organizations (HCAHO) received a contract to collect information on structure and process characteristics of samples of certified and non-certified hospices.

The Medicare Hospice Benefit

Proponents of the medical model have led in the effort to gain acceptance among public and private payers. Individual hospices and national organizations such as the National Hospice Organization succeeded in focusing public attention on the needs of hospices as providers, through demonstration programs, initiated by state governments and private payers, and through a Medicare demonstration, begun in 1980. The Medicare Demonstration paralleled a coordinated effort by Congressional supporters and hospice advocates to add a hospice benefit to Medicare. This effort succeeded in 1982. The Medicare Hospice Benefit has the following characteristics:

- Benefit[1] payments can only be made to Medicare beneficiaries, enrolled in a Medicare-certified hospice, who are certified by their physicians to have a prognosis of six or fewer months, and who agree to waive their rights to regular Medicare Part A benefits for any services directly related to their terminal conditions.

- Originally, Hospice Benefit payments spanned a maximum of seven months, broken into two 90-day benefit periods, followed by a "grace" period of 30 days, if needed. Under recent legislation, the 7-month limit will be lifted in January, 1989.

- Medicare certified hospices have to adhere to certain structural standards, including direct provision of core nursing and counseling services and maintenance of professional management responsibility for their patients in all settings. In addition, participating hospices are required to manage utilization in such a manner that the total annual percentage of hospice inpatient days do not exceed 20 percent, and that the average reimbursement do not exceed an annually adjusted budget cap.

- Reimbursements are paid on a prospective, per diem basis for all but physician services. Each day of a beneficiary's enrollment period is reimbursable at one of four rates:

- routine home care

[1]In this report, we refer to the Medicare Hospice Benefit as the Hospice Benefit or "the Benefit."

- continuous home care (paid at an hourly rate, up to a 24 hour maximum)
- general inpatient care
- inpatient respite care

Physician services provided by salaried hospice staff are reimbursed separately; other physician services are reimbursed through Medicare Part B. Medicare Part A-covered services not related to the terminal condition are reimbursed under Part A, as non-hospice services.

Exemptions may apply for some hospices. For example, all hospices operating before 1974 were exempted from the payments limits imposed on other hospices, over the initial three year life of the Benefit. In addition, hospices in rural areas that want certification but face labor market conditions that limit their ability to provide 24-hour nursing can apply for a waiver of the core services requirement.

Since implementation of the Benefit in November, 1983, a few important changes in the law have strengthened the position of the Hospice Benefit within Medicare:

- A sunset provision was eliminated. This means that Congress need not take further specific action to continue the Benefit.
- Per diem rates have been increased, in response to industry concerns that early rates, based on experience under the HCFA Demonstration, were too low.

In spite of the political success of hospice advocates, Congress and other observers have continued to express interest in how much the Benefit has cost the Medicare program, and in what ways the existence of a Benefit has affected the hospice industry. This evaluation addresses these concerns.

The Medicare Hospice Benefit Program Evaluation

Data for the Medicare Hospice Benefit Evaluation came from many sources. The frame within which Hospice Benefit and conventional care patients were selected was defined by a sample of counties:

- Certified hospice counties: every county containing at least one Medicare-certified hospice in FY84; as hospices were certified, new counties were added to the original 124;

- Non-certified hospice counties: a sample of 212 of the 633 U.S. counties with at least one non-certified hospice and no certified hospice in FY84; county designation was switched to certified during the Evaluation, as appropriate;

- Non-served counties: a sample of 247 of the 2,295 counties with no known hospice program in FY84; designation was changed during the Evaluation if a certified hospice located in a non-served county.

In FY85, sample sizes were increased among non-certified counties (by 68) and non-served counties (by 80) to maintain rough proportions of the three county types as more counties acquired certified status.

Beneficiary samples included all hospice beneficiaries and samples of cancer and non-cancer conventional care cases in sample counties.

The first report of the Evaluation summarized implementation problems of the Benefit, presented statistics describing beneficiary length of enrollment, utilization, reimbursement and charges, compared characteristics of counties that first attracted Medicare-certified hospice with counties that did not, and completed certain other analyses, based on data collected under the HCFA Hospice Demonstration and other ongoing research: analysis of costs and use of drugs in hospice, analysis of patterns in out-of-pocket expenditures of hospice patients, comparisons of Medicare and non-Medicare hospice utilization and charges in the last six months of life. A separate report, authored by Brown University Center for Health Care Research staff, reviewed and synthesized recent literature and research on all aspects of hospice care. This literature synthesis was subsequently published.(Mor, V. **Hospice Care Systems: Structure, Process, Costs and Outcome.** New York: Springer Publishing Company. 1987).

In the second summary report, descriptive statistics regarding beneficiary experience and provider participation in the program were updated. Findings from an analysis of Medicaid payments to terminally ill patients, during the last year of life, were reported. Utilization and reimbursement data from hospice beneficiaries and from a sample of non-hospice Medicare beneficiaries were compared. Data from both samples were used to address the issue of hospice savings. Findings from a Joint Commission on Accreditation of Health Care Organizations study of structure and process in U.S. hospice

care were reported. Finally, preliminary cost statistics from Medicare-certified hospices were presented, to show how providers' costs compared to the per diem rates set to pay for Medicare-reimbursed services. (HCFA **Medicare Hospice Benefit Program Evaluation.** HCFA Extramural Report. Baltimore, September, 1987).

Other Topics in Hospice Care

Certain topics that have been studied elsewhere will not be addressed in this evaluation. These include quality of life and quality of care, access to care and the nature of the hospice intervention. It is risky to be conclusive, given the brief time during which researchers have focused on hospice care. However, most observers would probably agree on certain generalizations about hospice care:

1. Using accepted measures, researchers have been unable to show that hospice participants enjoy a quality of life superior to that of non-hospice recipients of "non-aggressive" therapy. This finding holds across several indicators.

2. Patient satisfaction measures are ambiguous. Although hospice patients appear to be more satisfied with their care than non-hospice patients, this finding seems to be related to hospice type. (Mor, 1987, op. cit.)

3. JCAHO findings demonstrate a structural dichotomy in the U.S. hospice industry, between the "medical" model hospice, which provides many nursing and social services directly, maintains fairly well-defined admissions criteria and requires specific professional qualifications of certain staff, and a less structured model based extensively on voluntarism. In terms of process, hospices are clearly superior to non-hospice providers in supporting the family and other informal caregivers during bereavement. However, hospices have not been found generally superior to non-hospice providers in pain and symptom control, and in non-bereavement counseling.

4. Much of the recent literature on the structure and process of hospice care highlights the extent to which, as Mor and Masterson-Allen(1988) note, the hospice movement has moved into the mainstream of American medicine. For example, scholarly articles on pain and symptom control are now more

frequently published by established journals (the Archives of Internal Medicine, the Journal of Gastroenterology), although new journals, such as the Hospice Journal, the American Journal of Hospice Care, which are dedicated to hospice have emerged. These newer journals might be expected to concentrate on less medical issues, like psychosocial outcomes and counseling.

This increased acceptance has not been without cost, however. In the early years, government facilitated hospice growth and development, through the federal demonstration programs, sponsored by HCFA and NIH. More recently, government has adopted a more familiar payer/regulator stance, commensurate with demands from the industry and the public for expanded coverage and for definition (and protection) of standards that define "good quality" hospice care. Simson and Wilson (1986) report a conviction among hospice directors that government's attention to credentialing hospice care, through licensure and certification, has strengthened the industry. At the same time many of these directors regret the loss of control associated with government involvement.

Theory and practice in the clinical dimensions of hospice care often diverge. Since the early years in England, hospice advocates have stressed pain control, management of other physical and psychological symptoms and counseling,both of the patient and caregiver(s) as cornerstones of the hospice approach. Utilization of drugs and other therapies to control pain varies widely among patients. In particular, there is still considerable disagreement on the kinds of drugs that should be used and on the appropriate frequency and dosage. (Geltman and Paige, 1983; Levy, 1985; Takeda, 1985) Pain management is also constrained by legal restrictions on the use of narcotic analgesics. Some hospice patients receive drugs to control other symptoms, such as gastrointestinal distress, dyspnea and depression; however, limited evidence indicates that these symptoms go untreated, in many cases. (Reuben and Mor, unpublished; Goldberg and Mor, in press).

Few studies have attempted to delineate how costs of hospice care are shared among potential payers; none have used post-Benefit data for this purpose. The National Hospice Study showed that hospice patients not receiving waivered services paid out of pocket about $23 per day while in hospice (patients who received waivered services only spent $6 per day). By contrast, the average non-hospice Medicare patient in the NHS sample spent $46 per

day. How much Medicare, Medicaid, other public payers , commercial insurance and Blue Cross/Blue Shield contribute cannot be deduced, from the data generated by diverse samples of hospice patients across diverse studies, because investigators considered payer share either too difficult to measure or of little importance, relative to other issues.

Organization of the Report

In this Final Summary Evaluation Report, we use data from the first three years of the Medicare Hospice Benefit to analyze four broad questions.

- How has the Medicare Benefit affected the hospice industry?
- Is hospice care, as currently reimbursed by Medicare, a cost effective alternative to more aggressive, or less intensive, non-hospice interventions?
- What explains differences in hospice and non-hospice expenditures?
- What would be the effect on the Medicare program of certain changes in the Hospice Benefit?

Chapter 2 addresses industry impact, at two levels:

- Industry Growth: County and MSA-level Medicare expenditure and utilization are related to the presence of Medicare certified hospices. Factors associated with the expansion of the certified hospice sector are evaluated.
- Provider Behavior and Cost: Provider survey data, collected by Jack Martin and Company under contract to HCFA, are evaluated to determine why hospices decide not to seek certification. Cost data, from hospices included in the Jack Martin study of non-certified hospices, and from cost reports submitted to HCFA by certified hospices, between FY84 and FY86, are compared, to help determine the structural differences between the groups that might serve to limit the rate at which providers seek and obtain certification.

Chapter 3 evaluates costs and savings, at the beneficiary level. Analysis of lengths of enrollment, utilization patterns, charges, and reimbursements are conducted, to compare patterns among beneficiaries, categorized by available demographic and medical indicators, and among hospice provider types. Estimates based principally on utilization reimbursed under

Medicare Part A (hospice and non-hospice) are supplemented by Part B data, for beneficiaries who died in FY85.

The question of whether or not hospice has saved money for the Medicare program is addressed with beneficiary-level data, and with area-level aggregations of reimbursement data. Two beneficiary-level analyses are conducted: the first uses an "actuarial" approach, similar to the method used by HCFA, to estimate savings unadjusted for beneficiary characteristics. The second uses multivariate statistical techniques, to compute savings for an "average" terminally ill beneficiary. The county-level analysis compares total Medicare Part A payments for terminally ill individuals, between counties and MSAs with certified hospice beneficiaries and those without.

Finally, Chapter 4 speculates about the future of the Medicare Hospice Benefit, using policy simulations to predict changes in total Medicare spending that would be generated by changes in the Benefit. The chapter concludes with a summary assessment of the program and the implications of program modifications.

CHAPTER 2

MEDICARE AND THE HOSPICE INDUSTRY

Since the middle 1970s, the U.S. hospice industry has been organized around a model of home and community based care.[1] As the home care industry expanded in the early 1980s, the number of hospices grew as well, driven both by a general increase in demand for long term care services, and by a change in attitudes toward home-based services and, in general, less aggressive, more "family-centered" care for the terminally ill.

The current size of the U.S. hospice industry is difficult to determine. No single list of the number of active provider exists. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) pulled together disparate sources (The National Hospice Organization membership list, state hospice association rosters) to estimate a total of 1700 hospices in 1985. However, as many investigators have learned, most hospice lists overstate the number that actually provide services. Programs that the NHO defines to be in the "planning" stage may never become operational. The Medicare Hospice Benefit Program Evaluation has not been able to improve upon the efforts of others; until more hospices become licensed and/or certified to provide Medicare or Medicaid-reimbursed services, it is unlikely that reliable, current lists of hospice providers will be available.

Therefore, in order to study the effects of the Benefit on the supply of hospice services, this Evaluation uses information drawn from several sources, including samples of certified and non-certified providers, to

---

[1]Hospice, Inc. is an important exception that proves this rule. This program has always stressed inpatient placement. One of the original free-standing programs, Hospice, Inc. was exempted from the caps and payment rates of the Benefit through the end of FY86, and was reimbursed on a cost basis, as it had been under the HCFA demonstration. Since then, Hospice, Inc. has been paid at the appropriate Benefit per diem rates, but has not been subject to the 20 percent cap on inpatient days.

explore several questions:

- Where do hospices locate? What characteristics of health care market areas have proved most conducive to the establishment and growth of certified hospice programs? Where has Medicare certification been most widespread?

- What are the organizational features of the hospice industry? Which kinds of hospices (freestanding, provider-based) have grown most rapidly? Which kinds have elected to seek Medicare certification? Why have some hospices decided not to be Medicare certified?

- What share of their potential markets do hospices serve? How much of this share is served by Medicare-certified hospices?

- Has the average number of Medicare Benefit patients per hospice program changed? How much of increases in supply of Medicare-certified hospice services in an area is due to additional programs and how much to expanded patient census in existing programs?

Summary of Findings

- Certified hospice programs grew rapidly over the first three years of the Benefit, by about 40 percent annually.

- The geographical distribution of certified hospices has remained fairly stable, with the largest percentage of certified hospices located in the East, particularly in the Middle Atlantic states. The proportion of freestanding hospices was higher in the South Atlantic states, while most hospital-based and SNF-based hospices located in the East North Central states.

- Although HHA-based hospices still make up the largest group by type of certified hospices, freestanding providers have increased their share, from 28 to 34 percent. The average Hospice Beneficiary census in freestanding hospices also increased relative to the provider-based programs.

- Based on a small and not necessarily representative sample of certified hospices that submitted Medicare cost reports, certified hospices seem to be larger and to have lower average costs than non-certified hospices.

- Medicare certification appears to have benefited providers, who generally enjoyed positive and increasing net Medicare revenues. A majority of certified hospices earned positive net revenues and the percentage of

"winners" increased from FY85 to FY86 for all types except hospital/SNF-based providers.

- A majority of non-certified hospices sampled would have earned positive net Medicare revenues had they been certified in FY85. This percentage would have increased in FY86 for all non-certified hospices except hospital-based providers.

- Certified hospices were able to earn positive net revenues while generally conforming to reimbursement and inpatient day limits in the Benefit program.

- In a survey taken among a sample of non-certified hospice administrators, before the Benefit rate increase took effect, most administrators in "independent" (freestanding) and hospital-based hospices said that low payment rates were an important factor in their decisions not to seek certification. Community-based hospices (HHA-based) were more likely to cite the costs of adhering to core services requirements.

- Certified hospice providers' charge/reimbursement rates did not differ significantly among types, over time or among regions. There was no convincing evidence from this analysis that charge/reimbursement reflected variations in relative "profitability" among provider types.

2.1 Growth of Medicare Certified Hospices

Between FY84 and FY88, the number of Medicare Certified hospices increased at an average annual rate of nearly 40 percent. In the second annual report of the Hospice Benefit Evaluation (DHHS/HCFA, September, 1987), it was estimated that certified providers were about 20 percent of all U.S. hospices in FY85 (Table 9, page 52). The certified share has increased since then. Assuming that the industry expanded from the FY85 estimate of 1239 hospices to 1700 in FY86, the 320 certified providers would enjoy more than a 22 percent share. By FY88, there were 541 certified providers. Any reasonable assumption regarding industry size in FY88 of 2000 or less implies a certified hospice share of 25 percent or more.

The patterns of growth in certified providers, in terms of hospice type, timing and location may have an effect on the relative cost effectiveness of the Benefit. Location is important because variations in cost of living and community standards regarding the practice of medicine may affect hospice care and patterns of utilization in hospice and non hospice

settings. Table 2.1 shows that the distribution of certified hospices among regions has remained quite stable from FY84 through FY86. New England and the Central States have gained. The South Atlantic and Pacific regions have lost proportionately. The largest concentration of certified hospices is in the Mid-and South Atlantic regions, as it was in the beginning of the program.

Certified Hospice Types. Most hospice research, including analyses completed during the first two years of this Evaluation, confirms the critical importance of hospice type in explaining variations in utilization and costs. Why hospice type matters is still unclear. National Hospice Study analysts in their evaluation of the Medicare hospice demonstration divided all providers into home care hospices (providers with no direct inpatient care capacity) and hospital based hospices (providers which owned inpatient beds). Patients in hospital-based hospices were shown to incur higher costs than home-care hospice patients. The Hospice Benefit Evaluation has used HCFA's typology, including provider-based programs (home health agency-based, hospital-based and skilled nursing facility based) and freestanding hospices. The "bedded/non-bedded" distinction used in the NHS is less helpful in this Evaluation, because information on whether or not certified hospice programs own or contract for inpatient care capacity was not available. All certified hospice programs have to make some arrangement to provide (and maintain some management responsibility over) inpatient services for their enrolled Beneficiaries.

HHA-based hospices make up the largest group by type among certified providers; however, freestanding hospices have increased their relatively large share over this period. As Table 2.2 shows, of provider-based programs, only HHA-based hospices have maintained their share of the total from FY84 through FY86, at 40 percent. Hospital and SNF-based hospices have both lost ground, despite rapid growth in the hospital-based segment, from 38 providers in FY84 to 74 in FY86. Freestanding hospices have continued to increase their share, from 28 percent in FY84 to 34 percent in FY86.

Certified Hospice Medicare Caseloads. Certified freestanding hospices also dramatically increased the numbers of Medicare Benefit enrollees they served as Table 2.3 demonstrates. Based only on data from certified hospices that submitted claims under the Benefit during the last two study years, these figures show that the increase in Benefit patient census per provider for all

Table 2.1

CERTIFIED HOSPICES BY HHS REGION: FY 84-86

HHS Region	FY84	FY85	FY86
New England	3	19	24
% Total	2%	8%	8%
NY, NJ, PR	18	29	32
% Total	13%	12%	10%
Mid-Atlantic	15	25	32
% Total	11%	10%	10%
S. Atlantic	37	53	68
% Total	26%	22%	21%
E.N. Central	21	42	61
% Total	15%	17%	19%
S. Central	8	19	30
% Total	6%	8%	9%
W.N. Central	7	10	15
% Total	5%	4%	5%
Mountain	7	12	16
% Total	5%	5%	5%
S. Pacific	15	22	23
% Total	11%	9%	7%
N. Pacific	10	15	19
% Total	7%	6%	6%
TOTAL	141	246	320

Source: AAI Hospice Provider File/HCFA

Table 2.2

NUMBER CERTIFIED HOSPICES BY TYPE: FY84 - FY86

Hospice Type	FY84	FY85	FY86
Freestanding	39	76	109
% Total	28%	31%	34%
Hospital-based	38	51	74
% Total	27%	21%	23%
SNF-based	8	8	10
% Total	6%	3%	3%
HHA-based	56	111	127
% Total	40%	45%	40%
TOTAL	141	246	320

Source: AAI Hospice Provider File/HCFA

Table 2.3

AVERAGE ANNUAL CERTIFIED HOSPICE BENEFIT CENSUS BY TYPE
FY85, FY86

	FY85	FY86
All		
Average Medicare Benefit Census	40	60
Number of Certified Providers	179	240
Freestanding		
Average Medicare Benefit Census	46	82
Number of Certified Providers	65	98
Hospital-Based		
Average Medicare Benefit Census	40	43
Number of Certified Providers	40	48
SNF-Based		
Average Medicare Benefit Census	57	56
Number of Certified Providers	5	4
HHA-Based		
Average Medicare Benefit Census	32	37
Number of Certified Providers	69	89

Note: Includes only hospices for which patient claims were filed under the Benefit.

Source: AAI/HCFA Hospice Benefit Enrollment File

hospices, from 40 in FY85 to 60 in FY86, was due almost entirely to a near doubling of Benefit census in freestanding hospices. HHA-based and hospital-based programs increased by 3 to 5 patients; SNF-based hospices declined by one.

Certified Hospice Location. Hospice types are unequally distributed across regions, as Table 2.4 shows. The South Atlantic region has the largest percentage (37 percent) of certified freestanding hospices, well above its share of all certified hospices (21 percent). The East North Central region dominates the hospital-based group, with 27 percent, compared to its share of the total (19 percent). This region also has the largest share of HHA-based programs, 23 percent of the total. Most SNF-based hospices are concentrated on the East Coast, in New York, New Jersey and the other Middle Atlantic states (60 percent for Regions II and III, compared to 20 percent of all certified hospices). Table 2.4 also compares distributions of hospice types within regions (the percent region total row values). The South Atlantic region's heavy concentration in freestanding hospices (59 percent of the region's total, compared to 34 percent for the U.S.) is demonstrated here as well. In contrast, the East North Central region's hospices are predominantly hospital and HHA-based (81 percent, compared to 63 percent for the nation).

Timing of Certification. Timing of entry among certified providers may be analytically relevant, because the reimbursement environment, within and outside of the Benefit, has changed over the three years of the Evaluation. Providers that applied for certification early in this period are likely to be different from providers that applied later, in part because changes in reimbursement incentives may have affected the certification decision. Providers with a history in the program may also have learned how to cope with system constraints more effectively than recently-certified hospices. Finally, timing affects the credibility of Beneficiary statistics, particularly those affected by the distribution of lengths of Benefit enrollment. As Chapter 3 points out, much of the apparent change in lengths of enrollment over the three study years reflects distortions in the distribution caused by the timing of provider entry (recent entrants will be observed to have relatively "short" average stays, compared to earlier entrants which will naturally show more patients with longer stays).

Table 2.4

NUMBER CERTIFIED HOSPICES BY HHS REGION AND TYPE
(Includes All Hospices Certified at End of FY 86)

HHS Region	Hospice Type				Region Total	% Grand Total
	Freestanding	Hospital-Based	SNF-Based	HHA-Based		
New England	9	2	0	13	24	8%
% Region Total	38%	8%	0%	54%		
% Type Total	8%	3%	0%	10%		
NY,NJ,PR	13	5	2	12	32	10%
% Region Total	41%	16%	6%	38%		
% Type Total	12%	7%	20%	9%		
Mid-Atlantic	8	5	4	15	32	10%
% Region Total	25%	16%	13%	47%		
% Type Total	7%	7%	40%	12%		
S. Atlantic	40	15	2	11	68	21%
% Region Total	59%	22%	3%	16%		
% Type Total	37%	20%	20%	9%		
E.N. Central	11	20	1	29	61	19%
% Region Total	18%	33%	2%	48%		
% Type Total	10%	27%	10%	23%		
S. Central	13	7	0	10	30	9%
% Region Total	43%	23%	0%	33%		
% Type Total	12%	9%	0%	8%		
W.N. Central	4	7	0	4	15	5%
% Region Total	27%	47%	0%	27%		
% Type Total	4%	9%	0%	3%		
Mountain	2	2	0	12	16	5%
% Region Total	13%	13%	0%	75%		
% Type Total	2%	3%	0%	9%		
S. Pacific	5	5	0	13	23	7%
% Region Total	22%	22%	0%	57%		
% Type Total	5%	7%	0%	10%		
N. Pacific	4	6	1	8	19	6%
% Region Total	21%	32%	5%	42%		
% Type Total	4%	8%	10%	6%		
Type Total	109	7	1	12	320	
% Grand Total	34%	23%	3%	40%		100%

Source: AAI Hospice Provider File/HCFA

Over half of all hospital- and SNF-based certified hospices received certification in FY84, whereas the majority of certified freestanding hospices entered after the first half of FY85. However, there are few clear patterns in the timing of entry by hospice type, as Table 2.5 shows. Percentages rise and fall over the 6-month periods used to group certification dates. HHA-based activity was most intense through the end of FY85; 61 percent of all providers certified in the first half of FY85 were HHA-based. Eighty percent of all SNF-based hospices were certified by the end of FY84, even though this small segment of the hospice industry never exceeded 6 percent of total certifications in any period. Freestanding hospices gained, from a range of 23 to 31 percent of all certifications through the first half of FY85, to shares ranging from 39 to 48 percent from the second half of FY85 through the end of FY86.

2.2 The Costs and Benefits of Certification

Provider decisions to apply for certification, and to enroll and submit claims for Hospice Beneficiaries are affected by market level factors, by the experience of hospices that have attained certification and by perceptions of the financial and non-financial gains associated with this decision. This section reviews the evidence on market factors that relate to certification, the financial condition of currently certified hospices, structural differences between certified and non-certified hospices and the perceptions of non-certified hospices regarding the "costs" of certification.

Market Factors Affecting Certification

Because hospice care is a relatively new and highly specialized mode of care, we expect hospices to be located in relatively urbanized areas where concentrations of potential users are high, where supporting medical referral networks are well developed, and where there are available specialized health care resources to complement hospice care. Certified hospices must also demonstrate the mix of staff and contracted arrangements needed to meet core services requirements of the Medicare Hospice Benefit. The costs of meeting these requirements will probably be lower in urbanized, resource-rich markets; even though wage levels in urban areas often exceed rural wages, the real costs of attracting skilled nurses to sparsely populated counties may exceed prevailing rates.

Table 2.5

NUMBER CERTIFIED HOSPICES BY CERTIFICATION DATE AND TYPE
(Includes All Hospices Certified at End of FY86)

Certification Date (Six Month Periods)	Hospice Type				Period Total	% Grand Total
	Freestanding	Hospital-Based	SNF-Based	HHA-Based		
FY84 QI-II	25	19	5	32	81	25%
% Period Total	31%	23%	6%	40%		
% Type Total	23%	26%	50%	25%		
FY84 QIII-IV	14	19	3	24	60	19%
% Period Total	23%	32%	5%	40%		
% Type Total	13%	26%	30%	19%		
FY85 QI-II	15	6	0	33	54	17%
% Period Total	28%	11%	0%	61%		
% Type Total	14%	8%	0%	26%		
FY85 QIII-QIV	22	7	0	22	51	16%
% Period Total	43%	14%	0%	43%		
% Type Total	20%	9%	0%	17%		
FY86 QI-II	11	9	0	8	28	9%
% Period Total	39%	32%	0%	29%		
% Type Total	10%	12%	0%	6%		
FY86 QIII-IV	22	14	2	8	46	14%
% Period Total	48%	30%	4%	17%		
% Type Total	20%	19%	20%	6%		
Type Total	109	74	10	127	320	
% Grand Total	34%	23%	3%	40%		100%

Source: AAI Hospice Provider File/HCFA

Table 2.6

CHARACTERISTICS OF U.S. COUNTIES BY AVAILABILITY OF HOSPICE CARE
1986

Characteristics	One or More Certified Hospice (FY86)	Only Noncertified Hospice(s)	No Hospices
n	265	649	2158
County Populatio (000s)	414	106	25
Population Density (Population per square mile)	1350	224	48
Number of CT Scanners in County	2.66	0.50	0.03
Mean Per Capita Income (TEB1)	9.89	8.92	7.80
Median School 1970	12.0	12.0	11.6
% Counties in SMSA	73	36	13
% White Population	88	92	89
% Specialist MD's/Total MD's	85	69	40
MD's/100K Population	182	122	57
AAPCC Rate-Aged	127	115	108
% Pop on A.F.D.C.	4.1	3.5	3.3
Mean Herfindahl* Index Score	0.18	0.20	0.19
% Population in HMO	3.9	1.7	0.6
# Megavolt Radiation Units	3.28	0.63	0.04
# of Short Term General Hospital Beds	2149	471	94
# of Long Term SNF Beds	47	14	7
# of ICU Beds	131	24	4
Part A HMO Medicare Enrollment	1486	279	34
Part A Total Medicare Enrollment	50473	13006	3251
Population Over 65 Years	46815	11819	3027

Source: AAI/HCFA Hospice Benefit Enrollment File

* Measure of hospital competition

Table 2.7

LOGIT ESTIMATES OF THE PROBABILITY OF HOSPICE FORMATION
1986

Dependent Variable: Odds of Certified Hospice in County

Variable	Coefficient	
Number of CT Scanners in County	0.425	(4.18)
Mean Per Capita Income (TEBI)	.008	(1.01)
Median School 1970	-.479	(-8.16)
% Counties in SMSA	.853	(4.13)
% White Population	.003	(0.47)
% Specialist MD's/Total MD's	.043	(8.57)
MD's/100K Population	.001	(1.37)
AAPCC Rate-Aged	-.003	(-0.95)
% Pop on A.F.D.C.	-.028	(-0.82)
Mean Herfindahl Index Score	.036	(0.61)
% Population in HMO	.030	(1.69)
# Megavolt Radiation Units	.094	(1.30)
% Population Over 65 Years	-1.220	(-0.50)
Hospital Beds per Population	-66.818	(-1.74)
SNF Beds per Population	-102.046	(-0.64)
ICU Beds per Population	278.376	(0.89)
Medicare HMO per Total Medicare Enrollment	-2.732	(-1.05)

Note: Asymptotic t-values in parentheses.

Source: AAI/HCFA Hospice Benefit County File

Data presented in Table 2.6 confirm the general picture that certified hospice counties (with one or more certified providers by FY86) were larger, more densely populated, better provided with specialized technologies (CAT scanners, ICU beds) and physicians (specialists as a percent of total patient care physicians). Certified markets were also more competitive, based on HMO penetration, and higher in socioeconomic measures (per capita income and, though less obviously, median education); percent on AFDC proves this rule, with a larger percentage in certified counties.

In order to evaluate how important these various influences are in determining whether or not a county attracts one or more certified hospice programs, we estimated a logit regression of the odds of being a certified county (in FY86), as determined by many of the variables listed in Table 2.6. Many of these were converted to per capita rates in the regression.

Most of the impressions conveyed in descriptive statistics are reinforced in the coefficient estimates shown in Table 2.7. Urban counties well supplied with sophisticated health care technologies were more likely to attract certified hospices. Hospital and SNF bed availability appears negatively related to probability of certification after controlling for other factors. This may reflect an effects of "overbedding", where markets saturated with acute and long-term bed capacity were poor candidates for certified hospices, which simply add to existing capacity. Certified hospices tended to locate in counties with relatively young average age levels.

The Financial Implications of Certification

Providers contemplating an application for Medicare certification will certainly weigh the implications of this decision for net provider revenue. High levels of net revenue do not, by themselves, make an unassailable case for certification. In the short term, any provider must also be concerned about cash flow and other indicators of financial performance. Medicare certification may be perceived as costly in claims payments delays and "red tape", imposing new overhead costs needed to manage the Benefit, even for providers with few or no "startup" costs (of meeting core services requirements, for example).

This analysis addresses two issues:

- Has the Benefit been a source of financial gain or loss for certified hospice providers?

- Are the financial implications of the Benefit likely to encourage application for certification?

To conduct this analysis, AAI staff combined data from Medicare Certified Hospice Provider Cost Reports, for FY85 and FY86, with data gathered from a sample of non-certified hospices, by Jack Martin and Company. There were 55 certified hospice cost reports for FY85, and 123 for FY86 that contained sufficient usable data to be included in the analysis. Of this group, 30 submitted cost reports in both years, constituting a panel of "continuing certified" hospices. Much of the following discussion of certified hospice characteristics will use the continuing certified group, although statistics for the totals in both years will be shown as well. In the following discussion, data for hospital- and SNF-based certified hospices are combined, because too few cost Medicare reports were submitted from each group to yield meaningful averages.

The Jack Martin sample of non-certified hospices included 92 in FY85 and 84 in FY86, reflecting some attrition from the study.

Certain caveats regarding cost report data should be noted.

- The certified hospices that submitted cost reports do not constitute a random sample of the hospice industry, but a self-selected group. In contrast, the Jack Martin sample was scientifically selected. Therefore, it would be inappropriate to draw statistical inferences about estimates for the certified hospice providers, or about differences between certified and non-certified hospices. A statistical analysis of the non-certified hospice sample is presented in a separate report, prepared by Jack Martin and Company. Contrasts among estimates in this Evaluation report will not, therefore, be evaluated for statistical significance.

- Many of the certified hospices that submitted cost reports showed evidence of lack of understanding of the forms. Most relied on their own staff, or consultants, to complete the cost reports. Also, cost report forms were changed by HCFA over the study, to respond to provider complaints. Cost reports submitted by providers in the Jack Martin sample were completed by provider staff under the supervision of trained accounting professionals from Jack Martin and Company.

Therefore, we assume that the level of accuracy in the non-certified data is probably higher, on average, than in the certified data.

- Data from the Medicare cost reports submitted in FY84 were analyzed in the second annual report of this Evaluation. We noted at the time that only 36 of the 84 contained usable data. In addition, the non-certified cost reports cover only FY85 and FY86. For this reason, we have included only data from certified and non-certified hospices covering the years FY85 and FY86.

- The small group of "continuing" certified hospices may have filed cost reports in both years because they were more sophisticated in the business area of health care, and therefore not representative of all certified providers.

Certified hospices in this sample appear to have been larger, with lower average costs than non-certified hospices, as Table 2.8 shows. The average certified hospice in the "continuing" group served more patients and provided more total days than the average non-certified hospice in both years; in FY86, for example, the average certified hospice census was nearly twice the size of the average non-certified census, 166 compared to 82. Although certified hospices also provided more patient days, their patients apparently generated fewer patient days; total days per patient in FY86 averaged 57 for the "continuing" certified hospices, compared to 61 for non-certified hospices.

Cost and Profitability

Average costs were higher in the non-certified sample, whether measured per day or per case. An apparent decline in cost from FY85 to 86 among the continuing group, from $64 to $55 per day, was due to a parallel increase in days per patient; costs per case increased, from $2261 to $2998.

For the most part, the Hospice Benefit should appear to the average non-certified hospice to be a profitable activity, according to the figures in Table 2.9. Medicare net revenues were estimated by multiplying the total Medicare days in each care type by the appropriate per diem rate (given the location of the provider), which yields an "expected" revenue for that type of care. Total expected Medicare revenue was then summed across all types of care (routine home care, general inpatient care, inpatient respite and continuous home care). Total "Medicare costs" are the prorated share of total provider

Table 2.8

HOSPICE CHARACTERISTICS: MEAN CENSUS AND COSTS
FY85, FY86 CERTIFIED AND NONCERTIFIED HOSPICES

UNWEIGHTED

	FY85					
	All Certified	Certified Continuing*	Non-Certified	All Certified	Certified Continuing*	Non-Certified
N	52	8	92	118	28	84
Total Census	161	152	77	114	166	82
Total Days	6,613	5,023	4,287	4,607	6,440	4,483
Days/Census	50	44	60	48	57	61
Cost/Census	$3,012	$2,261	$4,479	$2,218	$2,998	$4,543
Cost/Day	$61	$64	$80	$53	$55	$81
Variable/Total Costs	0.60	0.84	0.84	0.79	0.78	0.88

Source: AAI/HCFA Hospice Provider Cost Report File

* Includes those certified hospices for which cost report data were available in both FY85 and FY86.

costs, based on the share of Medicare to total days. Total margin is defined as net Medicare revenue as a percentage of total expected Medicare revenue; the profit rate is the ratio of net Medicare revenue to Medicare costs.

Winners and Losers

In general, both total margin and profit rate tell the same story; providers did well under Medicare in both years and, probably due in part to the increase in per diem rates (plus the previously-mentioned decline in cost per diem among some certified hospices), certified hospices gained higher net revenues in FY86. Margin levels in FY85 were equivalent to HCFA's early estimates of hospital Medicare margins, in the first year of the Prospective Payment System. Most observers agree that margins have declined in hospitals since the first-year "windfall". No similar tendency appears among certified hospices. Of course, these observations apply only to the Medicare component of certified hospice operations; we have no way of estimating overall margins for these providers, lacking data for total revenues.

More than half of the certified providers in each hospice type category were "winners" under the Medicare payment system, in the sense that they earned positive net revenues. No fixed rate prospective payment system will generate positive net revenues for all providers, if rates are calibrated properly to encourage high cost providers to become more efficient. However, the percentage of winners is one important measure of fairness, because average margins can be positively skewed by high-valued outliers and therefore misleading. As Benefit payment rates increased, it appears that the percent of winners increased, in all categories except HHA-based providers. Between FY85 and 86, the percentage of winners remained constant 89 percent in this group, compared to an increase from 69 percent to 85 percent among all certified providers (stable at 86 percent, among continuing certified sample members). A non-certified hospice observer could logically assume, based on this evidence, that the chances of financial gain from certification, under the present system, outweigh the chances of loss.

Non-Certified Hospices: Would They Have Gained Financially?

In fact, based on provider cost structures during the Evaluation period, most non-certified hospices in the Jack Martin sample could expect to

Table 2.9

MEDICARE CERTIFIED HOSPICE MEAN TOTAL MARGIN AND TOTAL
PROFIT RATE FY85, FY86
BY TYPE

	Freestanding		Hospital-SNF-Based		HHA-Based		All		Continuing*	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Total Margin	.14	.17	.17	.52	.21	.30	.17	.30	.18	.22
rofit Rate	.37	.44	.64	1.43	.71	.82	.52	.81	.63	.63

Source: AAI/HCFA Hospice Provider Cost Report File

Includes those certified hospices for which cost report data were available in both FY85 and FY86.

earn positive net Medicare revenues. The estimates prresented in Table 2.11 were constructed in the same way as the estimates in Table 2.10, except that national average per diem rates were used (rather than the geographically-correct rates, based on HCFA's regional wage adjustment, applied to the certified providers). Once again, rate increases implemented in FY86 would have increased the share of winners among "independent" and "community based" hospices (comparable to freestanding and HHA-based categories among certified providers). Hospital-based providers would not have fared as well, with the percent of winners dropping from 68 percent to 63 percent. Overall, about three-quarters of the non-certified sample could expect to have earned positive net Medicare revenues. This figure remains constant instead of growing, partly because hospital-based hospices made up a larger proportion of the non-certified sample, and their deteriorating situation outweighed improvements expected among the other non-certified hospices.

Economies of Scale

Comparisons of certified and non-certified hospice average costs and potential profitability raises the question of scale economies: were non-certified hospices more costly on average than certified hospices because they tended to be smaller? Table 2.12 compares certified hospices across size quartiles, defined by total patient census, and provides an ambiguous answer to this question. In FY85, there is some evidence that larger hospices achieved lower costs per patient than small hospices. Among the continuing certified group, costs in the smallest size category averaged $2,461, compared to $2,011 in the large category; comparable figures for all certified hospices in the sample were $2,595 and $2,499. Costs per diem moved in the opposite direction, in part because small hospices operating at capacity provided more days for each patient than large hospices. However, conclusions based on FY86 data, for the continuing and for all certified hospices, yield exactly the opposite conclusion. Costs per patient increased with size (although there appears to be more of a tendency for the medium category to incur the highest unit costs). Clearly, there are too few hospices and years of data to provide any solid information on this issue. (A rigorous multivariate test of scale economies, based on structural cost analysis, was out of the question in this Evaluation, due to small sample sizes).

Table 2.10

CERTIFIED HOSPICES WITH POSITIVE NET REVENUES
BY TYPE
(FY85, FY86)

	Freestanding		Hospital-SNF-Based		HHA-Based		All		Continuing*	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Number of Winners	17	20	4	13	17	71	38	104	24	24
Percent of Total	57%	77%	67%	76%	89%	89%	69%	85%	86%	86%
n	30	26	6	17	19	80	55	123	28	28

Source: AAI/HCFA Hospice Provider Cost Report File

* Includes those certified hospices for which cost report data were available in both FY85 and FY86.

Table 2.11

NONCERTIFIED HOSPICES PROFITABLE UNDER "AVERAGE" MEDICARE RATES BY TYPE
FY85, FY86

	INDEPENDENT		HOSPITAL-BASED		COMMUNITY		ALL	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Number of Winners	32	32	25	22	12	9	69	63
Percent of Total	80 %	84 %	68 %	63 %	80 %	82 %	75 %	75 %
n	40	38	37	35	15	11	92	84

Source: Adapted from data supplied by Jack Martin and Co.

Table 2.12

CERTIFIED HOSPICE PROVIDER COSTS PER PATIENT AND PER DAY
BY SIZE OF FACILITY[1]

All Certified Hospices								
Size	Small		Medium		Large		All	
Year	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
n	11	29	29	61	13	28	53	118
Cost/Day	$59.6	$61.5	$68.8	$88.4	$72.2	$60.2	$67.7	$75.2
Cost/Patient	$2,595	$1,691	$2,441	$2,451	$2,499	$2,022	$2,483	$2,162

Continuing Certified Hospices*								
Size	Small		Medium		Large		All	
Year	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
n	9		15		6		30	
Cost/Day	$74.8	$70.8	$64.2	$56.3	$84.0	$69.1	$71.3	$63.2
Cost/Patient	$2,461	$1,800	$2,268	$3,576	$2,011	$2,779	$2,261	$2,884

Source: AAI HCFA Hospice Provider Cost Report File

* Includes those certified hospices for which cost report data were available in both FY85 and FY86.

[1]Facility size defined by patient census quartiles:

	FY85	FY86
Small	26 or fewer	40 or fewer
Medium**	27 - 124	41 - 233
Large	125 or more	234 or more

** Second and third quartiles

The Impact of Budget and Inpatient Utilization Limits

Whether or not certified hospices realized cost advantages due to scale, there is abundant evidence that providers operated well within Benefit restraints on Medicare expenditures even while earning high net Medicare revenues. No certified hospices exceeded the applicable FY85 reimbursement limit, as Table 2.13 shows. Only one HHA-based provider exceeded the limit in FY86. As noted in Table 2.13, this provider's "average" represents one very costly patient.

Certified hospices were less successful at limiting total inpatient utilization, although the percentage conforming to the 20 percent inpatient limit increased from FY85 to FY86. Table 2.14 shows that 19 out of 246 providers exceeded the limit in FY85, about 8 percent of the total. Predictably, hospital-based (16 percent) and SNF-based (25 percent) had more difficulty in this regard than freestanding (7 percent) and HHA-based (4 percent). In FY86, only 4 percent of all providers exceeded the limit. Percentages dropped across all hospice types: none of the 10 SNF-based providers violated the limit.

Non-Certified Providers' Perceptions of Certification

The evidence from limited samples of certified and non-certified hospices suggests that, under prevailing Medicare payment rates, certification would have been a sound financial move for most providers, because positive net revenues were obtainable without major efforts at cost containment. This assumes that these estimates accurately reflect reality across all certified hospice providers, an assumption we have already questioned because of the problems associated with the certified provider sample. It also assumes that non-certified providers perceived that certification would be beneficial. Jack Martin and Company completed a survey of administrators among their sample of providers, regarding attitudes toward the Benefit and reasons for non-certification. Table 2.15 reports some of their findings.

Nearly one-half of administrators surveyed in independent and hospital-based hospice programs claimed that low rates contributed to their decision not to seek certification. Only 25 percent of community-based providers cited this factor. Since this survey was conducted during site visits in FY85, the $10 per diem rate increase had not yet been implemented.

Table 2.13

FY85, 86 MEDICARE CERTIFIED HOSPICE PROVIDER CONFORMANCE TO REIMBURSEMENT CAP

Hospice Type	Minimum Average Reimbursement		Maximum Average Reimbursement		Number Over Cap	
	FY85	FY86	FY85	FY86	FY85	FY86
Freestanding	$286	$117	$4,606	$4,162	0	0
Hospital-Based	392	301	5,487	5,032	0	0
SNF-Based	1,986	3,551	4,297	5,082	0	0
HHA-Based	321	68	3,961	24,239	0	1*

Source: FY85, 86 HCFA Hospice Benefit Utilization File

*The one provider that had an average reimbursements over the cap had a benefit census of 1.

Table 2.14

FY85, 86 MEDICARE-CERTIFIED HOSPICE PROVIDERS CONFORMANCE TO TWENTY PERCENT INPATIENT LIMIT

Hospice Type	Minimum %		Maximum %		Number 20 Percent or Greater			
	FY85	FY86	FY85	FY86	FY85		FY86	
Freestanding	0.0	0.0	60.8	64.7	5	(76)	5	(109)
Hospital-Based	0.0	0.0	70.1	47.0	8	(51)	5	(74)
SNF-Based	0.0	0.0	25.3	18.6	2	(8)	0	(10)
HHA-Based	0.0	0.0	39.8	39.3	4	(111)	4	(127)
All	0.0	0.0	70.1	64.7	19	(246)	14	(320)

Source: FY85, 86 HCFA Hospice Benefit Utilization Files

Table 2.15

NONCERTIFIED HOSPICES'
REASONS FOR NONCERTIFICATION BY TYPE
FY86

	Independent	Hospital-Based	Community-Based	ALL
Reasons for Non Application				
Payment Rates Insufficient to Cover Costs	7 46%	18 49%	10 25%	35 38%
Financial Inability to Meet Requirements	1 7%	3 8%	8 20%	12 13%
Objections to Benefit Regulations				
No Reimbursement for Bereavement Counseling	11 73%	29 78%	29 73%	69 75%
Inpatient Care Rate	9 60%	25 68%	22 55%	56 61%
Routine Home Day Care Rate	9 60%	23 62%	21 53%	53 58%
$6500 Patient Cap	10 66%	25 68%	18 45%	53 58%
210 Day Limit	9 60%	17 46%	21 53%	47 51%
TOTAL	15	37	40	92

Source: Jack Martin and Co. Survey of Non Certified Hospice Administrators.

It would have been instructive to resurvey providers in FY86, after the rate increase.

Community-based providers were more likely to note the expense of conforming to Benefit regulations, such as the core services requirements, as reasons for not applying. However, only 20 percent responded in this fashion, and the percentages of independent and hospital-based hospices concerned about this problem were 7 and 8 percent respectively.

A majority of providers commented unfavorably on various controversial aspects of the program. Interestingly, the most frequently-raised objection concerned the failure of the Medicare Benefit to pay for bereavement counseling. Previous reports of this evaluation have reviewed the literature and the evidence from provider cost reports, to show that bereavement counseling has constituted a small share of total costs under any payment mechanism; even when there were no cost restraints, as in the National Hospice Study, providers varied greatly both in the proportion of families provided counseling and in the unit costs of these services.

As noted, since the survey was completed both the general inpatient and routine home care rates were raised, and the 210-day limit was removed. If administrators' survey responses are any guide to behavior, government action since these data were collected has removed or alleviated some concerns limiting provider participation in the Benefit.

2.3 Medicare Certified Hospice Charge/Reimbursement Patterns

Certified hospice providers can be expected to set charges to cover the cost of providing services on average, even if charge to cost ratios for individual patients and individual care types vary. As with other health care providers, hospice charges may or may not correspond with payments. Hospice pricing policies should respond to experience gained over time about how closely charges match payments, by payer, and what are appropriate ways to price services to preserve financial stability (given the presence or absence of revenues unrelated to patient care, such as research grants or charitable gifts).

Ideally, an analysis of how the Medicare Hospice Benefit has affected hospice charge setting behavior would compare charges for comparable services

over time and among payers, controlling for average costs, in order to evaluate the extent to which providers shift costs, either to stabilize revenues by compensating for inadequate payments from some third parties or to maximize net revenues. Unfortunately, only data on Medicare charges and reimbursements were available. Moreover, cost data were available for a nonrandom set of providers (analyzed above), and the costs applicable to Medicare patients cannot be isolated from these cost report data.

With these caveats in mind, we have studied variations in Medicare Hospice Benefit charge/reimbursement ratios to address the following questions:

- Are average charges typically set higher relative to reimbursements in hospice types that have enjoyed the least financial gain under the Benefit? According to earlier analysis of costs and net revenues, hospital based hospices would be most likely to set relatively high charges.

- Do charge/reimbursement ratios vary systematically among regions? If so, then part of apparent variations in hospice charge/reimbursement ratios may reflect variations in policies among fiscal intermediaries regarding claims denials.

- Do charge/reimbursement ratios vary among hospice cohorts, by date of certification? One might hypothesize that the ratio should be lower in a given year for "older" hospices, that have had the time and experience to gain understanding of the review processes of their fiscal intermediaries, and that have adjusted their charge levels toward expected reimbursement levels.

- Do charge/reimbursement levels vary by providers' patient mix or practice patterns?

An analysis file was created to address these questions. This file aggregates claims level data from the Hospice Benefit Utilization File to the provider level, and includes data on all providers that submitted one or more claims under the Benefit. Average charge/reimbursement rates for care types such as general inpatient, continuous home care, inpatient respite and physician services are misleading, because many providers reported zero claims in particular categories. Only 53 providers submitted claims in all care categories, in FY85 or FY86. Therefore, total average and routine home care ratios were used in the descriptive statistics (routine home care claims were submitted by all providers).

There were apparent differences in charge/reimbursement ratios among hospice types; hospital-based and HHA-based provider ratios were higher than freestanding and SNF-based (Table 2.16). The average, at about 1.03, appears to have remained virtually constant between the two years, balancing a decline among freestanding, hospital based and SNF-based ratios with an increase in the ratio for the average HHA-based hospice. The routine home care ratio did not always move with the total; in fact, on average it appears to have declined, from 1.03 to 1.02.

To determine whether or not these differences (among hospice types and between years) were promising indications of real behavior, total charge/reimbursement ratios were regressed on indicators of hospice type, year, the relative resource intensity of provider services (general inpatient days per total Benefit days, continuous care units per total Benefit days), region and the 6-month time period during which the hospice achieved certification.

This expression proved to have little explanatory power, with a 5.8 percent R-square statistic, and little precision as an estimator (a total F value of 0.979). In addition, the coefficients shown in Table 2.17 were not significant at any level. After adjustment for region, date of entry and intensity mix of hospice days, differences among hospice types in charge/reimbursement ratios disappear. We conclude that certified hospices have priced Medicare services consistently over time, on average, and uniformly across hospice types. It remains for another study to show how charge setting policies on services provided to non-Medicare patients are related, if at all, to provider involvement with the Medicare Benefit.

Table 2.16

MEDICARE HOSPICE BENEFIT CHARGE/REIMBURSEMENT
RATIOS: PROVIDER AVERAGE, BY HOSPICE AND CARE TYPE
FY85, FY86

	Total	Routine Home Care
All Hospices		
FY85 (N=167)	1.028 (0.094)	1.028 (0.141)
FY86 (N=222)	1.030 (0.150)	1.021 (0.165)
Freestanding		
FY85 (N=62)	1.013 (0.072)	1.011 (0.056)
FY86 (N=95)	1.010 (0.024)	1.006 (0.009)
HHA-Based		
FY85 (N=62)	1.019 (0.064)	1.029 (0.191)
FY86 (N=78)	1.045 (0.235)	1.027 (0.263)
Hospital-Based		
FY85 (N=38)	1.069 (0.148)	1.057 (0.151)
FY86 (N=46)	1.048 (0.114)	1.043 (0.119)
SNF-Based		
FY85 (N=5)	1.001 (0.002)	1.0012 (0.004)
FY86 (N=3)	0.996 (0.029)	1.004 (0.037)

Standard deviations in parentheses

Source: AAI/HCFA Hospice Benefit Utilization File

Table 2.17

MEDICARE HOSPICE BENEFIT TOTAL CHARGE/REIMBURSEMENT
SELECTED EFFECTS ESTIMATES, ADJUSTED FOR LOCATION (REGION)
AND CERTIFICATION COHORT

FY85 and FY86
N = 388

Average Charge/Reimbursement = 1.029

	Net Effect
Freestanding FY85	+0.0139
Freestanding FY86	+0.0108
HHA Based FY85	+0.0127
HHA Based FY86	+0.0392
Hospital-Based FY85	+0.0610
Hospital-Based FY86	-0.0060
Inpatient Days/Total Days	+0.1402
Continuous Care Units/Total Days	+0.0053
Average Shift: FY85 to FY86	-0.0133

Note: None of the coefficient estimates used here were statistically significant at a level of 5 percent or less.

Source: AAI/HCFA Hospice Benefit Utilization File

CHAPTER 3

THE IMPACT OF THE HOSPICE BENEFIT ON MEDICARE

From its first full year of operation in FY84, the Medicare Hospice Benefit has been responsible for only a small fraction of total Medicare payment for health care services. For example, in FY86 total Medicare Part A expenditures for hospital, skilled n ursing and home health care were almost $50 billion; it is estimated that Benefit payments during FY86 totaled about $20 million. Nonetheless, potential for growth is there. As the previous chapter indicates, the number of certified hospices grew at about 40 percent per year from FY84 to FY86. Continued growth could renew concerns about the relative cost of hospice care, and the Benefit's potential for saving (or costing) the Medicare program.

The Hospice Benefit can affect the Medicare program in two major ways:

- Total expenditure: having a Benefit in place can save the Medicare program (if total expenditures are lower than they would have been without the program in place) or cost (if the opposite is true).

- The balance between Part A and B: the Hospice Benefit integrates services (including some physician care) under Medicare Part A. In addition to any net Part A savings or cost effects the Benefit might have, a substitution of Part A for Part B services could also reduce beneficiary burden by curtailing copayments.

This chapter reports on the Benefit's impact on total Medicare Part A expenditure since program implementation in FY84. Limited evidence is also presented, to suggest how Benefit patients differ from other terminally-ill Medicare beneficiaries in use of Part B services.

The chapter is divided into three main parts. First we examine Medicare expenditure for Hospice Benefit patients in some detail; how Benefit expenditures vary among categories of Beneficiary types and providers. We also examine the apparent trends in length of enrollment or in patterns of service delivery.

In the second section, we test the proposition that the Benefit has been neutral with respect to total Medicare expenditure. Three methods are used. The first, an "actuarial" approach, makes use of a minimum of

information on hospice patients and a comparison group of non-hospice patients (the "conventional care" group), to show how much non-hospice Part A expenditure is saved by enrolling patients in the Benefit, over various length of enrollment periods.[1] The second method, a "multivariate regression" method, uses statistical techniques to remove potentially confounding factors from the Benefit/non-Benefit patient expenditure comparison; these factors include case characteristics and prior utilization indicators that help control for Beneficiary selection bias, as well as provider-type indicators. Sources of differential expenditure are explored. These include, for example, differences between Benefit and non-Benefit patients in utilization of inpatient services.

Both the actuarial and the regression methodologies suffer a common failing. Each presents estimates of the net expenditure difference with and without the Benefit based on patient-level comparisons. Despite efforts to adjust for potential bias in patient selection of the Benefit, and efforts to control for the effects of certified hospice type on net expenditures, the total impact of the Benefit reflects a complex interaction of patient-, provider- and market-level forces that patient-level analysis does not capture. Decisions of providers (to seek certification, to enroll Beneficiaries) may be as important in shaping Medicare savings as the decisions of patients and their families to participate. Market changes (discharge policies of hospitals under the Prospective Payment System, differential changes in payment rates among third party payers, state-level policies to constrain the growth of long term care costs) can affect the responses of both providers and patients to the Benefit option.

Therefore, we have presented a third model of expenditure impact that incorporates patient-, provider- and market-level changes, without trying to disentangle all of the complex interactions among them. This "area-level" analysis compares total Medicare Part A expenditures between counties that have active certified hospice programs in place and those that do not.

---

[1]The conventional care group may contain both non-hospice patients <u>and</u> non-certified hospice patients. Medicare data do not distinguish these two groups.

A final section compares total Medicare Part B and total Parts A and B expenditure over the last year of life, between Benefit enrollees and the comparison group of non-Benefit patients. Because dating conventions differ between Part A and B claims, it was not possible simply to combine the two into a month-by-month estimate of total Medicare expenditure.

Summary of Findings

- Reimbursements for Hospice Beneficiaries during Benefit periods averaged $2,261 in FY86. When "gaps" among Benefit periods are counted, the average total payment after initial enrollment was $2,336.

- Total Medicare Benefit and Part A expenditures for Hospice Beneficiaries increased from FY84 to FY86 at a rate above the annual rate of inflation. Total payments during Benefit periods increased 22 percent over this period. Regular Part A payment during inter-Benefit period "gaps" increased by over 50 percent.

- Trends in average Benefit charges showed increases for routine home care, and decreases for general inpatient and continuous home care from FY84 to FY86. These apparent changes in the composition of care within the Benefit were not accompanied by obvious changes in characteristics of Hospice Beneficiaries. They may reflect increased fiscal intermediary denials of continuous home care and general inpatient care claims.

- Unadjusted differences in reimbursements across providers showed freestanding hospices to be less expensive to Medicare than provider-based types. This generalization holds, although less strongly, even when these contrasts are adjusted for patient mix, prior utilization and length of enrollment effects. For example, the unadjusted difference between hospital-based and freestanding reimbursements per Beneficiary was $1,010 in FY85. With adjustment, the difference narrowed to $317.

- Average lengths of enrollment do not differ greatly among hospice types, although SNF-based hospice patients average enrollments were higher, at 43 days in FY86, than the other three with stays ranging from 34 to 37 days.

- The number, and to some extent the percentage, of Beneficiaries enrolled who leave the program has increased over the study period. The share of this group in the Beneficiary population increased from 6 to 7 percent from FY85 to FY86.

- Patterns of enrollment by patient characteristic have remained relatively unchanged over time: the very old (and the relatively young) have longer average stays than the 65-to-74 year age group; women stay longer than men.

- Establishing the existence of a length-of-enrollment trend over time is difficult. The timing of provider certification, and measurement conventions that have been adopted to compare Beneficiary cost and utilization across the three study years, mean that what might appear to be an increase (among Beneficiaries who died in each fiscal year) or a decrease (among Beneficiaries who enrolled in each fiscal year) is partly an artifact of the data. An estimate of the average length of enrollment, controlling for provider effects, suggested that lengths of enrollment probably increased somewhat between FY84 and FY85 for freestanding hospices, but remained the same or fell slightly for the other hospice types. Between FY85 and FY86, only estimates for hospital-based providers yielded statistically significant results, and they suggested that length of enrollment fell in this period.

- Over the last two years of the Evaluation, a large and growing percentage of Hospice Beneficiaries used routine home care (increasing from 89 to 92 percent), while use of general inpatient and continuing home care declined, from 28 to 24 percent, and from 11 to 8 percent, respectively.

- The inpatient fraction of total enrolled days fell also, on average and among Beneficiaries who used inpatient services. The relatively small percentage of Beneficiaries who used only inpatient services declined (from 10 to 7 percent), while the larger percentage who used all home care services increased.

- Multivariate estimates of the relative importance of patient mix characteristics in the selection of the Benefit show effects of age (very elderly patients were less likely to choose the Benefit), prior utilization (those with prior Part A inpatient or home health utilization were more likely to choose the Benefit) and cancer type (chances of Benefit election were higher for prostate, colon, breast and lung cancer patients). Exposure to hospice had a small, non-linear effect; up to 947 days of exposure (the time from the date the first certified hospice located in the patient's county until enrollment), increased exposure reduced the chances of Benefit election. After this point, exposure increased the chances of Benefit election.

- Total Part A expenditures were higher for conventional care patients than for Hospice Beneficiaries in the last month of life, by 30 percent in FY85 and 43 percent in FY86. Hospice Beneficiaries incurred costs that were higher than or no different from conventional care in earlier months.

- Non-cancer patients were less expensive to care for in the Benefit program than in conventional care, even though Hospice Beneficiaries with non-cancer diagnoses incurred higher total expenditures in the last year of life than Beneficiaries with cancer diagnoses.

- The Hospice Beneficiary who died at home or in an inpatient setting was more expensive than his/her conventional care counterpart in the last month of life. Despite the disparity, a hospice cost advantage comes from the fact that there are relatively more Hospice Beneficiaries who die at home, where both Beneficiary and conventional care costs are low relative to costs of death in a hospital.

- An unadjusted comparison between Hospice Beneficiaries and conventional care patients with cancer diagnoses over the last seven months of life suggests that Medicare saved $1.04 for every dollar spent on Benefit patients.

- This level of overall savings was due entirely to leverage from freestanding and HHA-based Beneficiaries, for whom savings were estimated to be $1.12 and $1.01, respectively. Hospital-based and SNF-based Beneficiaries incurred net costs.

- Estimates of Benefit net costs, adjusted for patient mix characteristics, showed that the Benefit generated net saving in the last month of life for Beneficiaries with up to five months enrollment. For Beneficiaries with more than one month enrollment, earlier months generally show net costs, or no statistically signficiant difference in costs between Beneficiaries and conventional care patients.

- Adjusted estimates reinforced impressions gained in comparing unadjusted averages: freestanding Hospice Beneficiaries generated savings, relative to the other, provider-based hospice Beneficiaries, particularly during the last month of life.

- County-level analysis of the impact of the presence of the Benefit (one or more certified hospice programs) and the relative penetration of the Benefit (the total number of hospice patient days among terminally ill Medicare cancer beneficiaries in the county) showed no statistically signficant Benefit effect once estimates were adjusted for demographic and health resource availability measures.

- The average conventional care patient in the FY85 Evaluation sample incurred $350 more Part B expenditure in the last year of life than the average Hospice Beneficiary; SNF-based Beneficiaries incurred more Part B expenditure than other Beneficiaries and conventional care patients alike.

- There was some evidence that the Benefit substituted for Part B expenditure, because each additional enrollment day was associated with a $10 decrease in total annual Part B payment, after adjusting for patient mix, hospice type and region.

- Conventional care patients cost $712 more than hospice patients in the last year of life in combined Part A and B expenditure; however, after adjustment for patient mix and region, this difference virtually disappears.

3.1 Total Benefit and Regular Part A Expenditures for Hospice Beneficiaries

Total Medicare Part A expenditure for enrolled Hospice Beneficiaries increased rapidly from FY84 to FY86 as the program expanded. To analyze Beneficiary expenditure and utilization, we created two files:

- the AAI/HCFA Hospice Benefit Enrollment File; this file contains Benefit and regular Medicare Part A charge, reimbursement and utilization information on all Hospice Beneficiaries with complete enrollment records, totaling 2,473 in FY84, 5,991 in FY85 and 12,366 in FY86;

- the AAI/HCFA Hospice Benefit Utilization File; this file contains all Enrollment File Beneficiaries with complete claims data, including 1,584 Beneficiaries in FY84, 4,710 in FY85 and 10,510 in FY86.

Table 3.1 breaks out expenditure for FY85 and FY86 by Benefit period, and payment category (Benefit, regular Part A), for Beneficiaries who died in each year. Total and per capita expenditures increased in all categories, in the two year period preceding enrollment, during Benefit periods and during gaps among Benefit periods and after disenrollment.

Regular and Benefit Part A expenditures for Beneficiaries who left the program, for whatever reason, increased more rapidly than spending during Benefit periods or before enrollment. Table 3.2, which summarizes some of the figures in Table 3.1, shows that pre-enrollment per capita expenditure grew by about 6 percent between FY84 and FY86, at about one-half the annual inflation rate. Total Benefit payments during Benefit periods increased, from $1,857 to $2,261 over the same period, a 22 percent increase. Per capita expenditures during periods after enrollment outside the Benefit increased by 53 percent, for inter-Benefit period gaps, and by 25 percent for gaps that ended in death outside the Benefit. Therefore, there is some indication, which cannot be proven with the existing data, that patients who disenrolled from the Benefit did so increasingly in response to perceived needs for more intensive health care services.

Findings reported in this chapter suggest that there have been some changes in the composition of Beneficiary use of services over the first three years. If these changes are real, then it could prove difficult to predict

Table 3.1

FY 85, 86 MEDICARE REIMBURSEMENT FOR TERMINALLY ILL HOSPICE PATIENTS
DURING THE LAST TWO YEARS OF LIFE

Hospice Plus Part A	Full Two-Year Period		Before Hospice Enrollment		Hospice Benefit Period 1		Inter-Benefit Gap 1		Hospice Benefit Period 2		Inter-Benefit Gap 2		Hospice Benefit Period 3		Disenrollment/ Death Gap	
	FY 85	FY 86	FY 85	FY 86	FY 85	FY 86	FY 85	FY 86	FY 85	FY 86	FY 85	FY 86	FY 85	FY 86	FY 85	FY 86
Hospice Benefit																
Total (000s of dollars)	$9,785.4	$23,066.8	0	0	$9,336.6	$21,935.5	0	0	$416.8	$1,052.4	0	0	32.0	78.9	0	0
Per Patient (dollars) (N=)	2,078 (4,710)	2,195 (10,510)	0	0	1,982 (4,710)	2,087 (10,510)	0	0	2,998 (139)	3,462 (304)	0	0	1,780 (18)	1,715 (46)	0	0
Medicare Part A																
Total (000s of dollars)	61,746.8	137,574.1	60,397.8	133,627.6	541.0	1,436.9	63.6	263.3	8.1	50.2	2.3	2.3	0	0	734.0	2,193.7
Per Patient (dollars) (N=)	14,139 (4,367)	14,323 (9,605)	13,872 (4,354)	13,973 (9,563)	2,493 (217)	2,915 (493)	4,896 (13)	6,124 (43)	2,032 (4)	3,348 (15)	2,292 (1)	2,314 (1)	0	0	4,766 (154)	5,554 (395)
Hospice Plus Part A																
Total (000s of dollars)	71,532.2	160,640.9	60,397.8	133,627.6	9,877.6	23,372.4	63.6	263.3	424.9	1,102.6	2.3	2.3	32.0	78.9	734.0	2,193.7
Per Patient (dollars) (N=)	15,187 (4,710)	15,285 (10,510)	13,872 (4,354)	13,973 (9,563)	2,097 (4,710)	2,223.8 (10,510)	4,896 (13)	6,124 (43)	3,057 (139)	3,627 (304)	2,292 (1)	2,314 (1)	1,780 (18)	1,715 (46)	4,766 (154)	5,554 (395)

Source: FY 85, 86 HCFA Hospice Benefit Utilization Files

Table 3.2

MEDICARE REIMBURSEMENT PER PATIENT FOR CERTIFIED HOSPICE PATIENTS: BENEFIT PLUS REGULAR PART A

FY84-FY86

Year	Before Hospice Enrollment	After Enrollment		
		During Benefit Periods	During Inter Benefit Gaps*	During Disenrollment/Death Gap*
FY84	$13,164	$1,857	$3,840	$4,441
FY85	13,872	2,123	4,707	4,766
FY86	13,973	2,261	6,036	5,554

Source: AAI/HCFA Hospice Benefit Utilization File

*As Table 3.1 shows, the numbers of Beneficiaries with gaps are few. In FY86, out of 10,510 total Beneficiaries, 44 had a gap between Benefit periods, and 395 disenrolled before death.

future expenditures for the program from a system the structure of wich is changing. If these changes are only illusory, and based on more on problems in the data than on real behavior patterns, then what can be observed over these years becomes a potential baseline data set for program forecasting.

Real changes in service patterns might come from various sources:

Increased Patient Demand

- As the program matures, knowledge of the Benefit becomes more widespread among potential Beneficiaries and their professional and informal caregivers. If this knowledge is accompanied by generally favorable perceptions, new types of patients might seek enrollment in the program.

  Their needs could contribute to a shift in the "typical" composition of services, and to a change in the average length of enrollment. Increasingly unfavorable perceptions could also have an impact, of course, if certain types of potential enrollees begin to resist participation in the Benefit.

Increased Service Availability

- Certified hospices may learn over time about how financially risky it is to enroll certain types of patients in the Benefit. This knowledge can work in various ways. On the one hand, hospices may become less eager to enroll patients with some diagnoses, based on experience with unexpectedly long stays or intensive needs for services. On the other hand, experience may show that initial fears regarding the impact of "outlier" cases on hospice revenues were exaggerated; some hospices may become more willing over time to enroll patients with heavy care needs .

Providers may also alter "patterns of practice", at the margin, in response to the learning experience mentioned above, in response to widespread increases in knowledge about what is effective hospice care, and in response to financial incentives. In particular, changes in the Medicare per diem rates implemented in FY86 differentially affected the rates for routine home care and for general inpatient care. A flat increase of 10 dollars per day increased the home care rate by 18 percent, while increasing the general inpatient care rate by only 4 percent.

The questions that will be examined in this section include:

- Has the composition of expenditure for Medicare Beneficiaries changed? Have the characteristics of Hospice Beneficiaries changed? To what extent can expenditure patterns be explained by patient mix? How do expenditure patterns vary among hospice types?

- Has the average length of enrollment in the Benefit changed over the three years studied? What factors are associated with different lengths of enrollment? How much variation in enrollment is associated with the type of provider, as compared to the types of Beneficiaries the provider serves?

- Have the proportions of home and inpatient services delivered to Beneficiaries changed? What factors are associated with the relative dependence on institutionalized service delivery?

- Has the Benefit/regular Part A distribution of total Medicare expenditure for Beneficiaries during enrollment changed? What factors are associated with use of regular Part A-reimbursed services?

Patterns of Total Charges and Expenditure

Average Medicare reimbursements (Benefit plus Part A) after Benefit enrollment increased from FY85 to FY86 by 6.5 percent, slightly above the rate of medical care price inflation (averaging 6.2 percent between FY84 and FY88), as Table 3.3 shows. These figures differ from those in Table 3.2 because they incorporate total Part A expenditure after enrollment (including gaps). The median reimbursement increased by 10.5 percent, explained partly by the fact that the high end of the distribution did not grow. In fact, the maximum reimbursement per Beneficiary, which was $31,350 in FY85, was $31,116 in FY86.

In general, routine home care charges increased, between FY85 and FY86, at the expense of charges for the relatively more intensive general inpatient and continuous home care services. In fact, routine home care charge increases account for most of the total increase in per capita Benefit charges between FY85 and FY86. This pattern is replicated across all hospice types, as Table 3.4 shows. Total per capita charges for inpatient respite and physician services increased as well. Continuous care charges declined among all but hospital-based hospices, for which average increases occurred ($76 to $88). Overall, continuous care charges dropped from $139 to $103, driven

Table 3.3

TOTAL MEDICARE REIMBURSEMENTS FOR HOSPICE PATIENTS DURING BENEFIT ENROLLMENT
FY85, FY86 UTILIZATION SAMPLES, BY HOSPICE TYPE

	All		Free-Standing		Hospital-Based		SNF-Based		HHA-Based	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Mean Medicare Reimbursements	$2,194	$2,336	$1,732	$2,046	$2,742	$3,018	$3,526	$4,422	$2,041	$2,432
Median Medicare Reimbursements	1,262	1,394	1,064	1,256	1,610	1,756	2,140	2,858	1,207	1,484
Maximum Reimbursement	31,350	31,116	30,393	30,671	28,313	30,770	23,497	31,116	31,350	27,311
Minimum Reimbursement	0	0	52	46	0	0	113	56	0	0
Number Patients	4,710	10,510	1,720	6,137	1,278	1,681	239	190	1,471	2,502

Source: AAI/HCFA Hospice Benefit Utilization File

Table 3.4

FY85, 86 HOSPICE BENEFIT CHARGES PER PATIENT BY SERVICE AND HOSPICE TYPE
UTILIZATION SAMPLE

Service	All		Free-Standing		Hospital-Based		SNF-Based		HHA-Based	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Total	$2,202.13	$2,276.56	$1,629.13	$1,915.59	$3,052.43	$3,238.46	$3,443.05	$4,423.28	$1,930.61	$2,352.69
Routine Home Care	1,258.48	1,484.51	1,007.02	1,327.93	1,657.25	1,915.97	1,497.10	2,166.64	1,166.73	1,527.36
Continuous Care	138.74	102.88	119.86	106.66	75.66	88.25	31.30	22.71	233.16	109.51
Inpatient Respite Care	5.26	5.61	2.09	2.99	9.62	13.53	6.89	4.13	4.89	6.83
General Inpatient Care	769.59	644.44	449.65	435.76	1,290.48	1,198.23	1,898.13	2,207.52	507.05	665.53
Physician Services	30.07	39.13	50.50	42.26	19.43	23.19	9.62	22.28	18.77	43.46

Source: FY85, 86 HCFA Hospice Benefit Utilization Files.

mainly by a sharp drop among HHA-based hospices. Charges for general inpatient care declined as well, with freestanding and hospital-based hospices exerting leverage that countered increases among SNF-based and HHA-based hospices. Some of the decrease in charges for continuous home care and general inpatient care may be due to fiscal intermediary denials. Direct evidence for this explanation was not available, however.

It is unlikely that changes in total payments or in the composition of Benefit charges reflect major changes in patient mix; distributions of Hospice Beneficiaries across available measures of patient mix remained virtually unchanged between FY85 and FY86 , as Table 3.5 demonstrates. There was a slight increase in average age; 48 percent of Beneficiaries were in the over 75 year age category in FY86, compared to 46 percent in the previous year. Lengths of enrollment apparently increased by almost 4 days on average; part of this change reflects measurement problems, discussed later in this chapter. The characteristics of Hospice Benefit patients were somewhat different from those of conventional care sample members, as the table shows, particularly with respect to age and distribution across cancer diagnoses. However, these differences remained reasonably stable across the two fiscal years.

Length of Benefit enrollment and prior utilization have strong positive effects on total Medicare reimbursement during the Benefit period. In order to evaluate the implications of differences among hospice types controlling for patient mix characteristics, we regressed total Benefit plus Part A reimbursement on hospice type, age, gender and medical conditions, various indicators of length of enrollment, including a squared length of enrollment variable, and whether or not the enrollment was shorter than 5 days or longer than 180 days. Prior enrollment was captured by the amount of reimbursement for Part A inpatient and Part A home health care in the period 8 to 12 months before death. Special categorical variables were added to capture Beneficiaries who left and returned, or who left and died outside of the program.

Differences among hospice types, when HHA-based, freestanding and hospital-based hospices are compared to the excluded SNF-based hospices, are large and significant as Table 3.6 shows. Differences among included types shown here tend to be smaller than the unadjusted average shown in Table

Table 3.5

COMPARISONS OF PATIENT CHARACTERISTICS:
HOSPICE BENEFIT AND CONVENTIONAL CARE PATIENTS

Characteristic	Hospice (N = 5,991)	Conventional Care (N = 7,467)	Hospice (N = 12,366)	Conventional Care (N = 7,174)
Age				
Less than 75	54 %	47 %	52 %	47 %
75 or over	46	53	48	53
Gender				
Male	53 %	54 %	54 %	53 %
Female	47	46	46	47
Race				
White	91 %	87 %	90 %	88 %
Other	9	13	10	12
Diagnosis:*				
Colon cancer	29 %	21 %	28 %	20 %
Lung cancer	26	21	26	22
Breast cancer	6	4	6	4
Prostate cancer	11	9	11	10
Urinary cancer	3	4	4	4
Leukemia	1	4	1	4
Other cancer	24	38	24	36
Length of Stay	32.1 days		35.9 days	

Source: AAI/HCFA Hospice Benefit Enrollment File.

* Percentages represent proportions of all cancer diagnoses. Non-cancer percentages in the Benefit were 6 and 7 percent (FY85, FY86). Samples of non-cancer patients in conventional care were selected to be representative geographically, and totalled 47 and 49 percent of all conventional care patients respectively.

Table 3.6

ADJUSTED ESTIMATES OF TOTAL MEDICARE
REIMBURSEMENT DURING BENEFIT PERIODS
SELECTED REGRESSION COEFFICIENTS

FY85 and FY86
N = 15,093

	Coefficient	T-Statistic	Prob > T
Hospice Type			
HHA-based	-$786	-5.656	0.001
Hospital-based	-$672	-4.815	0.001
Freestanding	-$989	-7.301	0.001
Total length of enrollment	+$76	50.186	0.001
Length of enrollment squared	-$0.03	-2.279	0.0227
Length of enrollment 5 days or less	-$191	-4.031	0.001
Length of enrollment 180 days or more	-$481	-1.310	0.1903
Pre-hospice Part A inpatient reimbursement	+$46	7.168	0.001
Pre-hospice Part A home health reimbursement	+$1.35	2.998	0.0027
Patient has gap between Benefit periods	+$3700	17.903	0.001

Source: AAI/HCFA Hospice Benefit Utilization Files

3.3. For example, the unadjusted average difference between hospital-based and freestanding reimbursements per Beneficiary in FY85 was $1,010; adjusted for patient mix, the difference was $317 ($-672-(-$989)). Adjusting for length of enrollment among provider types explains much of this narrowing of expenditure differentials. An additional day adds significantly to total average reimbursement, at a decelerating rate for long stays. Very short stays (under 5 days) are less expensive, even after adjustment for actual length of enrollment. The deceleration in the rate of expenditure increase as enrollments lengthen is magnified for Beneficiaries with stays over 150 days. They do not cost less than the average enrollee, but their costs are lower than what would have been predicted from length of enrollment alone. Both inpatient and home health reimbursement incurred before enrollment have strong positive effects on Benefit reimbursements, suggesting that the differences among Hospice Beneficiaries after enrollment perpetuate patterns of use established before enrollment. Finally, individuals who had gaps among reimbursement periods also incurred higher expenditures during Benefit periods, suggesting perhaps that these individuals required particularly intensive levels of service that they felt had to be satisfied outside of the program.

Length of Enrollment

This report confirms the critical importance of length of hospice enrollment in determining average hospice Beneficiary expenditures and cost effectiveness relative to conventional care. In this section, we describe patterns of length of enrollment, and explore the questions of whether or not any trend in the average length of enrollment within the Benefit can be detected for the period FY84 through FY86.

Average lengths of enrollment have been quite comparable across hospice types, as Table 3.7 shows. SNF-based hospice patients averaged 43 days in FY86, but the other three types ranged between 34 days (HHA-based) and 37 days (hospital-based). Increasing numbers of Beneficiaries left before death, and for many categories the length of time after disenrollment and before death increased from FY85 to FY86. This applies to those who exhausted the Benefit as well, for whom average time from leaving to death increased from 51.2 days to 86.4 days. It may be that hospices have admitted more

Table 3.7

FY 85, 86 HOSPITCE BENEFIT ENROLLMENT PERIODS:
LENGTH AND COMPOSITION BY HOSPICE TYPE

Length of Periods	Overall		Free-Standing		Hospital-Based		SNF-Based		HHA-Based	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Average length of enrollment	32.1	35.9	32.5	36.3	33.1	37.0	31.5	43.1	30.7	33.9
All enrollees	(5,991)	(12,366)	(2,495)	(7,431)	(1,413)	(1,850)	(255)	(204)	(1,828)	(2,881)
Average enrollment in	29.3	31.3	29.9	31.3	29.8	32.3	28.2	36.5	28.1	30.1
Benefit period 1:	(5,991)	(12,366)	(2,495)	(7,431)	(1,413)	(1,850)	(255)	(204)	(1,828)	(2,881)
Average enrollment in	38.4	45.1	36.8	45.3	40.7	44.8	55.1	45.3	36.7	44.7
Benefit period 2:	(409)	(1,176)	(170)	(751)	(106)	174	(13)	(26)	(120)	(225)
Average enrollment in	24.1	22.3	23.4	21.7	23.3	25.9	30.0	27.2	23.6	20.2
Benefit period 3:	(40)	(212)	(9)	(137)	(15)	(36)	(4)	(6)	(12)	(33)
Average gap between	53.5)	58.9	62.2	45.2	18.6	98.6	46.5	244.2	59.1	26.6
1 and 2:	(32)	(95)	(16)	(56)	(5)	(10)	(2)	(6)	(9)	(23)
Average gap between	108.0	59.8	--	69.5	3.0	10	--	--	160.5	40.7
2 and 3:	(3)	(15)	(0)	(11)	(1)	(1)	(0)	(0)	(2)	(3)
Average days before death:	52.5	50.2	44.7	45.7	64.7	76.3	80.6	100.0	54.7	43.0
left after period 1	(303)	(626)	(145)	(353)	(58)	(90)	(8)	(10)	(92)	(173)
Average days before death:	56.5	92.2	45.8	97.3	44.0	125.0	--	111.0	99.2	62.0
left after period 2	(24)	(82)	(13)	(46)	(6)	(12)	(0)	(2)	(5)	(22)
Average days before death:	--	103.5	--	102.3	--	120.3	--	--	--	92.5
left after period 3	(0)	(13)	(0)	(6)	(0)	(3)	(0)	(0)	(0)	(4)
Average days before death	51.2	86.4	38.3	70.3	55.0	126.5	77.8	88.4	33.4	83.3
benefit was exhausted	(22)	(105)	(4)	(60)	(9)	(25)	(4)	(5)	(5)	(15)

Source: AAI/HCFA Hospice Benefit Enrollment File.

applicants with uncertain prognoses over time. The percentage of patients leaving alive (and not returning) has increased only slightly, from 6 to 7 percent.

Patterns of enrollment length by patient characteristic have generally remained stable between FY85 and FY86. Longer stays were characteristic of the youngest (under age 65) and oldest (75 or older) Beneficiaries. Women were enrolled on average four days longer than men. Enrollment periods were generally longer for white and black Beneficiaries than for other groups. Persons with gaps and persons who died outside of the program had longer enrollment periods. Only medical condition (cancer, non-cancer) showed a change, from near equality to non-cancer enrollment average nearly three days more than cancer.

Measurement and Interpretation. The observed length of enrollment in the Medicare Hospice Benefit for a particular individual is the result both of disease progression and of decisions made at three levels: program, hospice, and patient. Although the actual commitment to receive care under the Benefit is made by the patient, his ability to make that choice is contingent on the availability of a nearby certified hospice and on his knowing about the Benefit. Therefore, the decision to become certified and the timing of certification by a hospice can greatly affect an individual's decision to enroll. This certification decision by the hospice is in turn influenced by program-level factors, such as the per diem rates, patient and inpatient caps, and provision of contracted services. The hospice may also affect an individual's decision in the way in which it presents the Benefit as one of the patient's financing options. Because this entire process is dynamic and actions at any of the three levels could affect subsequent behavior at any of the three, it is worth considering carefully the possible interactions of these when trying to model length of enrollment over time.

An individual's choice of hospice care under the Benefit and subsequent length of enrollment are determined by preferences and health care status, which can reasonably, albeit incompletely, be captured by demographic, prior health care utilization, and diagnosis data. Indeed, in a world where the Benefit is universally available at homogenous providers and has been for a long period of time, these person-level variables could be expected to account for much of the variation in length of stay. However, provider

participation in the Benefit is still growing and providers are not homogeneous. Also, hospices may consider admitting a patient for care as a distinct step from informing them of or suggesting Benefit enrollment. To the extent that this does occur, we can only consider Benefit enrollment, since hospice experience prior to enrollment is unknown. This also greatly increases the role of the hospice in determining Benefit enrollment, and makes the inclusion of provider-level attributes much more important. Before discussing this further, we should first consider the importance of the certification decision on our model.

The continuing growth of the pool of certified hospices creates a fairly simple measurement problem. Imagine two similar people who select hospice care at the same stage of their disease, say four months before death. One enrolls in a certified hospice and immediately upon entering the hospice is covered by the Benefit. The second patient lives in an area not served by a certified hospice, so his hospice enrollment occurs without Benefit coverage. However, his hospice becomes certified during his stay , and the final twenty-two days of his four month hospice stay show up with Benefit utilization. In this case, the two patients, although quite similar in demographic and health characteristics, end up with quite different lengths of enrollment in the Benefit. This will lead to a correlation between an individual's length of enrollment and the hospice's length of certification which is completely due to measurement and has no behavioral basis or implications.

It may be the case that hospices behave differently as their experience with the Benefit grows--for example, hospices may relax prognosis requirements if they do not find the 210 day limit as restrictive as they had anticipated. If this occurs, the longer the hospice is certified, the longer the average length of enrollment may become, which would also lead to a correlation between length of enrollment and length of certification. However, in this case, this correlation is behavioral and could have program implications. Because the measurement problem described above would work in the same direction (longer hospice enrollment corresponds to longer hospice certification), it will be very important to try to isolate the two effects.

It is also possible that hospice characteristics themselves affect individuals' enrollment--type or regional groups may have similar admitting

Table 3.8

FY 85, 86 HOSPICE LENGTH OF ENROLLMENT
BY PATIENT CHARACTERISTIC: ENROLLMENT SAMPLE

Characteristics	FY 85 N	FY 85 (%)	FY 86 N	FY 86 (%)	Length of Enrollment FY 85	Length of Enrollment FY 86
Total	5,991	(100.0)	12,366	(100.0)	32.1 Days	35.9 Days
Age						
Less than 65	334	(5.6)	638	(5.2)	33.5	39.8
65 through 74	2,899	(48.4)	5,749	(46.5)	31.5	34.7
75 or more	2,758	(46.0)	5,979	(48.3)	32.5	36.7
Gender						
Male	3,171	(52.9)	6,624	(53.6)	30.1	34.2
Female	2,820	(47.1)	5,742	(46.4)	34.3	38.0
Race						
White	5,423	(90.5)	11,190	(90.4)	32.1	36.1
Black	385	(6.4)	787	(6.4)	33.6	35.5
Other	47	(0.01)	98	(0.02)	24.1	28.9
Condition						
Cancer	5,612	(93.7)	11,439	(92.5)	32.1	35.7
Non-Cancer	375	(6.3)	913	(7.5)	30.8	39.0
Had no gaps	5,956	(99.4)	12,256	(99.1)	31.8	35.4
Had gap between benefit periods	35	(0.6)	110	(0.9)	77.9	92.1
Died in hospice	5,664	(94.5)	11.645	(94.2)	31.6	35.1
Left hospice, died out of hospice	327	(5.5)	721	(5.8)	39.3	48.8

Source: AAI/HCFA Hospice Benefit Enrollment File

policies (in regard to prognosis, diagnosis, etc.). These characteristics may also be the main vehicle through which program attributes most affect length of enrollment--one hospice type may perceive itself to have a relatively longer length of stay so that the 210 day cap (if it doesn't deter participation altogether) may cause providers of this type to adopt more conservative admitting policies.

The above scenario could apply in the following situation. Two similar patients are admitted, each to a separate certified hospice, but neither patient knows about or requests the Benefit upon hospice admission. The first is informed about it and enrolls immediately. However, it is not suggested to the second until he has been in the hospice for three months. Again, the similar patient characteristics could not account for the difference, nor could different lengths of certification. Here, it is strictly some attribute of a hospice's practice pattern or financial condition, perhaps unmeasurable, which accounts for the difference.

These hospice characteristics may also be highly related to hospice certification decisions, which in turn can affect length of enrollment among Benefit patients who died by the end of FY86. However, if the length of certification issue is controlled for properly, it would be valid to interpret hospice characteristics as acting directly on the individual's length of enrollment.

Because the Benefit is the same for everyone, its main effect will be primarily as described above--different groups of providers (or patients?) may interpret differently the effects of certain aspects of the Benefit on them. Therefore, there is no need to explicitly account for the Benefit in modeling length of enrollment. (It is possible that Benefit changes in the past two years may be perceived differently by different providers, in which case provider characteristics would show a differential effect over time. It is important to note that the change in relative reimbursement rates is also likely to change the mix of service utilization, which is a different issue from changing the length of enrollment.)

Of all of the issues and effects described above, probably the most important is the measurement vs. behavior interpretation of a correlation between length of enrollment and length of certification. If a categorical variable is included to flag patients who died in FY86 (all others being from

FY85) in a regression of length of enrollment, the coefficient could be hard to interpret. Assume that in such a regression, the coefficient estimate is positive and highly significant. This may be entirely due to the measurement issue--patients who died in FY86 had a higher chance of having a long stay than those who died in FY85, since providers were still in the process of getting certified, and therefore patients' potential stays under the Benefit were more restricted in FY85 than in FY86. On the other hand, if there was no such measurement effect, such an estimate would imply that somehow (either due to provider or individual decisions) length of enrollment is exhibiting a secular increase over time. In this case, it would be very important to consider the implications, if such increases continued, on expected program costs over time. Because of the confounding nature of these two effects, we must carefully consider ways to investigate them before actually including such a dummy in a regression.

There are also some important measurement and interpretation issues raised by the fact that all patients for whom we have data had to have died by the end of FY86. This means that, for example, we can only include patients who enrolled in, say, August, 1986, if their length of enrollment is less than two months. This will necessarily cause lengths of enrollment to be shorter, among patients in more recently certified providers.

Combined, the selection of patients by year of death and the ongoing certification of providers should have some predictable effects. If we measure length of stay by year of enrollment, then we would expect a large drop in FY86, reflecting the fact that those who enrolled late in FY86 had to have short lengths of enrollment to be included. Similarly, if we measure length of stay by year of death, we should see a steady increase in length of stay from FY84 to FY86, because those who died in FY84 necessarily enrolled in FY84 (the beginning of the Benefit). This increase should be pronounced by the fact that hospices were slow in getting certified at the beginning of FY84, so that most FY84 patients enrolled in the latter part of the year, causing even shorter lengths of stay among those who died in FY84.

Length of Enrollment Findings. Table 3.9 shows the average length of enrollment in the Benefit for all Benefit patients who died before October 1, 1986 and had an uninterrupted stay at one provider (i.e., it excludes those patients who had gaps in their Benefit enrollment and/or exercised their

Table 3.9

HOSPICE BENEFIT ENROLLMENT BY YEAR ENROLLED AND YEAR DIED

By Year Enrolled	Mean Length of Enrollment	Standard Error	N
FY84	35.03	0.932	1,720
FY85	36.08	0.545	5,693
FY86	30.49	0.333	10,485
By Year Died			
FY84	26.73	0.782	1,374
FY85	30.64	0.461	5,232
FY86	34.39	0.370	11,292

Source: AAI/HCFA Hospice Benefit Enrollment File

option to switch providers). The top half of the table shows the average length of enrollment by year enrolled, and the bottom half divides the same universe of patients by year died.

The expected patterns emerge -- there is a slight increase in length of enrollment between FY84 and FY85 enrollees (perhaps attributable to provider certification truncation among earlier enrollees) and a sharp drop in FY86, almost certainly due to the constraint that these patients had to also die in FY86.[1] FY84 diers were also FY84 enrollees, and could not have long lengths of enrollment. The continued certification of new providers should perpetuate this understatement in FY85, but the presence of longer enrollees from FY84 helps offset it. By FY86 the average length of enrollment had risen to nearly 34.5 days, but this is still significantly lower than the 36.1 day average among those who enrolled in FY85.

The fact that the FY85 enrollees had the longest enrollment and that our measurement issues all relate to understatement of the length of enrollment suggests that this group is least affected by the various issues described above. This makes sense since this group should be least affected by the two dominant effects: new provider certification had slowed considerably by FY85 and the death cutoff of October 1, 1986 was far enough into the future that it should not have been a strong constraint. Obviously, the FY86 enrollees are dramatically affected by the death cutoff, while the FY84 mean suggests that the provider certification effect, when looked at by date of enrollment, may not have been particularly strong. In contrast, the provider certification problem dominates the FY84 mean when looked at by date of death. Overall, it appears that considering patients by year of enrollment will perhaps insulate us from a variety of measurement and selection problems, if we adequately account for the FY86 truncation. (It is important to remember that the numbers in Table 3.9 in no way imply that the length of enrollment dropped among FY86 Benefit enrollees; it dropped among those FY86 enrollees who also died in FY86. As noted, if we had data for patients who

[1]Lags in claims acquisition relative to the Evaluation Study period made it impossible for the Evaluation to extend utilization analysis into FY87, an obvious answer to the problem of truncated FY86 distributions. We also worked with shorter time periods, examining quarterly trends, but the same measurement problems plagued these analyses.

died in subsequent years, we would be able to include many more FY86 enrollees, who would certainly raise the mean reported here.)

Since our primary goal is to detect any changes in the length of enrollment over time and because of the variety of issues described above about the importance of hospice participation and characteristics on an individual's length of enrollment, we have decided to use a multivariate model for length of enrollment which includes a categorical variable for each hospice and variables identifying patients by year of enrollment, in FY85 (ENROLL85) and FY86 (ENROLL86). (FY84 enrollees are the group not explicitly flagged in the regression). This will allow us to control for provider-level effects so that the enrollment-year coefficients are not also accounting for provider certification, for example. Also, because there is some evidence that length of enrollment varies across provider types, we have elected to estimate four models - one for each type. Because of the FY86 death cutoff, we have also included a categorical variable for those patients who enrolled in the last four months of FY86 (LATENROLL). It is possible, however, that the length of enrollment effect for FY86 enrollees could still be understated. (So, if data were available for patients who enrolled in FY86 but died after FY86, we might get a higher estimate on the FY86 enrollment dummy.) The regression also includes demographic variables (age, race, diagnosis) as well as variables describing the Benefit enrollment pattern -- switched providers, had gap between periods, quit before death.

As Table 3.10 indicates, the coefficient estimate for ENROLL85 is significantly positive for freestanding hospices, negative for hospital-based, and insignificant for the other two. This suggests that among freestanding hospices, there was an increase in length of enrollment between FY84 and FY85, among hospital-based a decline, and no change in HHA and SNF-based providers. The insignificant estimates for ENROLL86 for all but hospital-based hospices, for which it is significantly negative, suggest that either the length of enrollment was the same (or shorter) in FY86 than it had been in FY84. However, it seems that these coefficients might be understated because of the death cutoff, in spite of the presence of the LATENROLL dummy. (If LATENROLL included the second half of the year, for example, we might observe an increase in the estimates for ENROLL86.) In general, the most encouraging feature of the multivariate estimates is that they seem to mirror the simple

Table 3.10

MULTIVARIATE REGRESSION ESTIMATES OF LENGTH OF BENEFIT ENROLLMENT

FY84-FY86 ENROLLMENT SAMPLES

DEPENDENT VARIABLE: TOTAL LENGTH OF BENEFIT ENROLLMENT

	Freestanding	Hospital-Based	SNF-Based	HHA-Based
ENROLL 85	4.70 (1.38)	-6.96 (2.19)	1.80 (3.88)	0.15 (1.63)
ENROLL 86	0.64 (1.33)	-11.84 (2.30)	-5.43 (4.61)	-1.63 (1.72)
LATENROLL	-16.27 (1.01)	-9.31 (2.28)	-4.84 (10.58)	-12.18 (1.52)
R^2	0.0831	0.1026	0.1244	0.0790
N	10,815	3,616	608	5,301

Note: Complete regression estimates are in Appendix. Standard errors shown in parentheses.

Source: AAI/HCFA Hospice Benefit Enrollment File

means in Table 3.9 -- overall length of enrollment, when considered by year enrolled, increased about a day between FY84 and FY85, where the overall change is given by a weighted average of the estimates in Table 3.10. However, it is difficult to determine whether or not it continued to grow in FY86.

The regressions provide some other insights into factors affecting length of enrollment in the Benefit. They suggest that hospice type may be an important determinant of length of enrollment, since the four models yield wsuch different parameter estimates in Table 3.10. Yet all four models show similarities in patient mix effects such as a significant effect of gender on the length of enrollment -- in all settings women have significantly longer lengths of enrollment, ranging from 3 to 9 days. Similarly, patients with Part A utilization in the last half of the year before death have significantly longer stays in all four settings.

Patterns of Utilization

We have discussed the relative incentives to providers to promote the use of routine home care, built into the Benefit from the beginning and reinforced by a proportionately large FY86 increase in the routine home care per diem. The discussion of total charges, reimbursements and lengths of enrollment suggest that, although the basic distribution of enrollments have not changed much over the first three years of the Benefit, the care composition of an enrollment period has changed, more toward routine home care and away from intensive, skilled services provided in inpatient settings or through continuous home care.

An examination of the relative frequency of Benefit services utilization reinforces this impression. Even though most Hospice Beneficiaries have used some routine home care since the first year of the Benefit, the percentage has actually increased over the last two years of the study period, from 89 to 92 percent. The largest increases occurred among hospital- and SNF-based Beneficiaries, for whom home care utilization rates had been relatively low in FY85. Table 3.11 also shows a small increase among freestanding hospice patients, from 92 to 93 percent. At the same time, the use of general inpatient care dropped among Beneficiaries, from 28 to 24 percent, as did continuous care utilization (11 to 8 percent).

Table 3.11

PERCENT PATIENT SERVICE UTILIZATION BY HOSPICE TYPE
UTILIZATION SAMPLE

	All		Freestanding		Hospital-Based		SNF-Based		HHA-Based	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
Routine Home Care	89	92	92	93	84	90	79	83	92	92
Continuous Care	11	8	12	9	5	6	3	3	16	8
Inpatient Hospital Care	2	2	1	1	3	5	3	2	2	2
General Inpatient Care	28	24	19	19	43	37	56	58	22	25
Physician Services	13	15	14	14	13	15	11	14	11	21

Source: AAI/HCFA Hospice Benefit Utilization Files.

Levels of Benefit inpatient utilization declined as well. Table 3.12 shows that the percent of total Benefit days spent in an inpatient setting declined from 16 to 12 percent on average. Among Beneficiaries who used some inpatient services, the percentage also fell, from 53 to 49 percent. Declines in average inpatient utilization were reasonably consistent across hospice types. However, among HHA-based hospice patients, the average inpatient percentage increased from 11 to 13 percent. Freestanding Hospice Beneficiaries, with a low rate of inpatient utilization equal to the HHA-based rate in FY85, showed a slight decrease, from 11 to 10 percent.

A relatively small number of Hospice Beneficiaries spent their entire enrollments in inpatient settings; this percentage dropped, from 10 to 7 percent from FY85 to FY86. As Table 3.13 shows, over the same period, the percentage of Beneficiaries who received only home care services (routine home care, with or without continuous care) increased from 68 to 72 percent. Only among HHA-based Hospice Beneficiaries did the "all home care" percentage decline, from 76 to 72 percent.

3.2 The Net Costs of the Hospice Benefit

Research on the hospice model of care has consistently demonstrated that, under certain conditions, hospice represents a less costly approach to caring for terminally ill individuals than conventional care. Most recent research agrees that the hospice cost advantage is greatest in the last month of life, when patients in non-hospice settings are most likely to use expensive hospital services. Not all agree that hospice is less costly overall; the longer an individual remains enrolled in a hospice program, the more hospice appears to exceed non-hospice care in expense, particularly to those third party payers, such as Medicare, that provide limited coverage for non-hospital services. The second year report of this Evaluation used preliminary data to conclude that the Benefit probably "broke even" overall, balancing clear savings in the last month of life with net costs for earlier months.

This section addresses net costs in three ways: a straightforward comparison of reimbursement, based on differences in utilization patterns between hospice and conventional care patients, over short time periods before death; a statistically-adjusted contrast of hospice and conventional care

Table 3.12

MEAN RATIO OF INPATIENT TO TOTAL DAYS FOR BENEFIT PATIENTS
FY85, FY86, BY TYPE

	FY 85		FY86	
	All Patients	Patients with Inpatient Utilization	All Patients	Patients with Inpatient Utilization
All				
Ratio Inpatient to Total Days	.16	.53	.12	.49
(N patients)	(4,710)	(1,400)	(10,510)	(2,680)
Freestanding				
Ratio Inpatient to Total Days	.11	.57	.10	.52
(N patients)	(1,720)	(347)	(6,137)	(1,228)
Hospital-Based				
Ratio Inpatient to Total Days	.23	.52	.18	.44
(N patients)	(1,280)	(580)	(1,681)	(686)
SNF-Based				
Ratio Inpatient to Total Days	.31	.54	.28	.48
(N patients)	(239)	(139)	(190)	(112)
HHA-Based				
Ratio Inpatient to Total Days	.11	.51	.13	.48
(N patients)	(1,471)	(334)	(2,502)	(654)

Source: AAI/HCFA Hospice Benefit Utilization File

Table 3.13

BEENFIT PATIENTS USING ALL INPATIENT OR ALL HOME CARE BY TYPE

FY85, FY86

Type	All Home Care		All Inpatient Care	
	FY85	FY86	FY85	FY86
Freestanding	1,325	4,755	12	39
% All Freestanding Patients	77%	77%	7%	6%
Hospital-based	684	978	199	168
% All Hospital-Based Patients	53%	58%	16%	10%
SNF-based	95	76	49	32
% All SNF-Based Patients	40%	40%	21%	17%
HHA-based	1,112	1,809	97	179
% All HHA-Based Patients	76%	72%	7%	7%
All types	3,216	7,618	470	776
% All Patients	68%	72%	10%	7%

Source: AAI/HCFA Hospice Benefit Utilization Files

reimbursement, controlling for patient mix and other effects; and a market-level analysis of the impact of the Benefit on total Medicare Part B expenditure for the treatment of terminally-ill cancer patients in the last year of life.

These savings analyses are preceded by an analysis of factors associated with Benefit election. Past comparisons of hospice and conventional care costs have been faulted on methodological grounds, for bias caused by patient self-selection. Selection of a conventional care sample for this study was done in a manner that should minimize certain types of selection bias. For example, the NHS has been criticized for sampling conventional care patients from those admitted to hospitals shortly before death; critics argue that this oversamples "high cost" conventional care patients, and "stacks the deck" in favor of a finding that hospice is less expensive than conventional care. Differences in patients' "length of illness" (the time from diagnosis data to death) were cited in this regard. Over 20 percent of the NHS conventional care sample had been diagnosed within one month of death, compared to about 4 percent of hospice patients. Critics contended that these late-diagnosed conventional care patients with their intensive utilization of hospital services in the last weeks of life, were not likely to be hospice candidates, as the NHS hospice patient data appeared to show.

Conventional care cancer patients for the Hospice Benefit Evaluation were selected from HCFA claims data, based on presence of at least one inpatient stay with a cancer diagnosis (or one of the life-threatening non-cancer diagnoses used in sampling) within the last two years of life, and residence within one of the sample counties. Thus, an individual with a diagnostic hospital episode 18 months before death but no Medicare-reimbursed utilization from that time on would have been included in the sample. Only Medicare beneficiaries with no inpatient episodes in the appropriate diagnostic category were excluded. Although we lack some of the kinds of indicators that could help correct for selection bias, such as functional status and socioeconomic factors at different stages in patients' terminal illnesses, this analysis of Benefit election provides some indication of factors that distinguish hospice from conventional care patients.

Distributions of lengths of illness differ between hospice and conventional care in this Evaluation, as they did in the National Hospice Study, but the differences are less dramatic. Table 3.14 shows over 20 percent of conventional care cancer patients with lengths of illness of one month or less, compared to about 14 percent among Hospice Beneficiaries. Illnesses of over 210 days were more common among Hospice Beneficiaries (41 and 42.2 percent in FY85 and FY86) than among conventional care patients (36.7 and 37.9 percent, respectively). Within both extremes of these distributions, frequencies are quite similar, however.

The Benefit Election Decision

To fully understand the effect of the Benefit on service use by Medicare recipients, it is important to understand what characteristics influence the use of hospice care in general, and certified hospice care in particular. This section includes both a descriptive analysis of the different patient populations (Benefit and conventional care) and a multivariate logistic model of the choice of Benefit or conventional care. Many patient attributes which may greatly influence the decision to enter hospice, such as functional level, presence of a primary care provider, and disease stage, are unavailable in the current study. Therefore, only very basic patient attributes such as age, race, sex, and cancer type are used below.

Table 3.15 shows some descriptive statistics for Benefit and conventional care cancer patients in counties which had at least one certified hospice during FY86. The first column describes a sample of Benefit patients which was drawn for use in the multivariate comparisons below. Table 3.15 suggests that Benefit patients were younger than conventional care patients, and that the Benefit sample included more whites and fewer blacks than the conventional care group. The Benefit sample also included significantly more colon, lung, breast and prostate cancer patients. Although Benefit patients had higher prior Part A charges (both total and HHA), the differences is not significant. And, surprisingly, the conventional care group appear to have been exposed to the Benefit longer, as measured by county certified hospice days by the end of FY86.[1] However, this difference is again not significant.

Table 3.14

MEDICARE HOSPICE BENEFIT[1]
AND
NATIONAL HOSPICE STUDY[2]
LENGTH OF TERMINAL CANCER ILLNESS DISTRIBUTIONS

	Hospice Patients			Conventional Care Patient		
		Medicare Hospice Benefit			Medicare Hospice Benefit	
Length of Illness (Days)	National Hospice Study (N=4492)	FY85 (N=4408)	FY86 (N=9738)	National Hospice Study (N=282)	FY85 (N=3937)	FY86 (N=3624)
0-29	3.6 %	13.6 %	13.9 %	20.9 %	20.7 %	20.6 %
30-59	7.5	13.6	12.4	9.2	12.9	12.5
60-89	9.1	8.4	9.2	7.8	7.9	8.2
90-119	9.7	7.6	7.2	2.5	6.8	6.4
120-149	9.0	6.3	5.8	8.9	5.2	5.8
150-179	7.6	5.3	4.9	5.7	4.9	4.4
180-209	7.6	5.0	4.4	6.0	4.8	4.1
210+	45.9	41.0	42.2	39.0	36.7	37.9

[1]Hospice Benefit length of illness defined as the time from the admission date of the first hospitalization with a cancer diagnosis (within a two-yer period before death) until death.
[2]National Hospice Benefit Study length of illness defined as the time from the data of lab-confirmed diagnosis of terminal cancer until death.

Source: National Hospice Study; AAI/HCFA Hospice Benefit Monthly File.

To better isolate the effect of each of these measures on the decision to use conventional care versus hospice care under the Benefit, we used the sample of Benefit patients and conventional patients described in Table 3.15 to estimate a logistic regression model of the decision. For simplicity, prior Part A utilization is measured by categorical variables representing whether a patient had any Part A charges during the period 13 to 18 months before death. The prior HHA utilization dummy should be capturing a patient's propensity to use home care, which we would expect to be highly correlated with Benefit use. Age was included in categorical form, with a dummy for each of three age groups (65-75, 75-85, 85+). Because exposure to the Benefit may at some point have an exponential effect on people's perception of and attraction to it, we have included exposure in both linear and squared form.

Table 3.16 shows the coefficient estimates for the model, along with their standard errors, where the left-hand side variable represents Benefit patients with 0's and conventional care patients with 1's. The table also includes a third column which converts the coefficient estimates to more standard elasticities. (Conversion was done by calculating p, the rate of conventional care choice, and multiplying each coefficient estimate by p(1-p). Because of the underlying nonlinearity of the logistic method, the estimates will yield different marginal effects depending on where they are evaluated. We have arbitrarily chosen the mean of the choice variable or, more simply, the rate at which our sample includes conventional care patients.) In order to interpret coefficient as "probability of being in hospice," rather than "probability of being in conventional care", the reader need only reverse the signs.

In general, the estimated effect of each characteristic mirrors that suggested by the simple descriptive statistics. For example, the 85+ age coefficient is significant and positive, making those in this category 13 percentage points more likely to choose conventional care, while blacks were

---

[1]A satisfactory explanation for this pattern is difficult to find. However, it could be the case that the interaction of certification timing, provider type (smaller, provider-based hospices tend to be older than the larger freestanding hospices) and geography (the early certified counties were larger in population) yielded some large counties with a "long" history with certified hospices, but with relatively few Hospice Benefit patients.

Table 3.15

CANCER PATIENT CHARACTERISTICS COMPARISON
HOSPICE V. CONVENTIONAL CARE PATIENTS USED IN CHOICE MODEL

Includes only patients in counties which have a certified hospice;
standard errors shown in parentheses

	HOSPICE PATIENTS*	CONVENTIONAL CARE PATIENTS
N	1259	1273
Age	74.64 (0.24)	75.54 (0.24)
%Female	47.3 (1.41)	47.9 (1.40)
%White	90.8 (0.82)	85.4 (0.99)
%Black	6.0 (0.67)	8.5 (0.87)
%Colon Cancer	29.1 (1.28)	20.5 (1.13)
%Lung Cancer	24.8 (1.22)	20.4 (1.13)
%Breast Cancer	5.1 (0.62)	3.4 (0.51)
%Prostate Cancer	12.0 (0.92)	8.4 (0.78)
Prior Part A Total Charges	2562.28 (179.39)	2231.94 (171.99)
Prior Part A HHA Charges	128.96 (16.34)	91.76 (12.78)
County Certified Hospice Days by End of FY86**	1226.08 (26.79)	1266.16 (30.93)

* Represents a 10% sample of the universe of Benefit cancer patients in certified counties.

** The sum of all Benefit days in a county, from November, 1983 through September 30, 1986.

Source: AAI/HCFA Hospice Benefit Monthly File

12 percent more likely. Similarly, just as there was not a significant difference in the rate of female participation between the two groups, the female coefficient estimate shown in Table 3.16 is insignificantly different from zero. The four major cancers included as dummy variables al significantly add to the probability of a patient choosing certified hospice care: prostate, colon and breast cancers all take 23 percentage points away from the probability that a patient will choose conventional care, while lung cancer has a slightly smaller effect, at 17 percentage points.

Prior Part A utilization contributes significantly to the probability of choosing certified hospice care. Those patients with any Part A charges during months 13-18 prior to death have a 6 percent higher chance of choosing certified care, and those with Part A home health utilization have another 7 percent added to that. Therefore, the net effect of having prior Part A HHA utilization is 13 percentage points, in the direction of choosing Benefit care. As suggested above, the prior HHA effect may capture the patient's preference for or familiarity with home care, or may be a measure of the severity of a patient's condition before enrollment, either of which would be expected to translate into a preference for Benefit care. The total Part A prior utilization variable, however, could be suggesting that patients with prior utilization are more active users of Medicare services in general, or it could be capturing illness effects, as suggested above.

The estimates for exposure and exposure squared suggest that there is indeed a strong nonlinear effect in this variable. According to these estimates combined, there is a net positive contribution to the probability of being in conventional care until total county certified hospice days exceed 947, at which point the squared term dominates the linear, and there is a net negative effect (contributing to a choice of Benefit over conventional care). The overall mean of the exposure variable is 1246, which suggests that on average it is contributing a net negative effect. However, with a minimum value of 8 among conventional care patients and 47 among Benefit patients, the distribution of exposure certainly includes values below 947, so that it often contributes a net positive effect. Overall, this estimate suggests that there is a sort of "snowball" effect of exposure, and so the 1000th certified day in a county contributes more to the probability that a patient will enroll in the Benefit that the 100th day does. The exposure variable is the only one

Table 3.16

LOGISTIC REGRESSION ESTIMATES OF CONVENTIONAL CARE V. CERTIFIED HOSPICE CHOICE:

Cancer patients in counties served by at least one certified hospice.

DEPENDENT VARIABLE: PROBABILITY PATIENT IS IN CONVENTIONAL CARE ≠

VARIABLE	COEFFICIENT ESTIMATE	STANDARD ERROR	IMPACT ≠≠
INTERCEPT	0.6242**	0.3101	0.1561
65<=AGE<75	-0.0136	0.2055	-0.0034
75<=AGE<85	0.1275	0.2085	0.0319
85<=AGE	0.5363**	0.2301	0.1341
FEMALE	-0.0102	0.0858	-0.0026
WHITE	-0.3132	0.2239	-0.0783
BLACK	0.4804*	0.2650	0.1201
COLON CANCER	-0.9196***	0.1076	-0.2299
LUNG CANCER	-0.6718***	0.1099	-0.1680
BREAST CANCER	-0.9135***	0.2166	-0.2284
PROSTATE CANCER	-0.9428***	0.1475	-0.2357
HAS PART A CHARGES 13-18 18 MONTHS BEFORE DEATH	-0.2391**	0.1039	-0.0598
HAS PART A HHA CHARGE 13-18 MONTHS BEFORE DEATH	0.2744*	0.1648	-0.0686
NUMBER CERTIFIED HOSPICE DAYS IN COUNTY	0.0010***	0.0002	0.0003
CERT. DAYS, SQUARED	-0.000001***	0.000000	0.0000003

*** significant at 1 percent level
** significant at 5 percent level
* significant at 10 percent level

≠ Impact is calculated as the effect of the coefficient estimate, as , at the observed rate of conventional care choice in this sample.

Source: AAI/HCFA Hospice Benefit Monthly File

≠≠ The effect of a particular variable on the probability of Benefit enrol by the coefficients shown here with signs reversed.

which shows a different effect in the multivariate model than was suggested by the descriptive statistics

Hospice/Conventional Care Cost Differences

Patterns of expenditure for terminal care over the last months of life have been explored in the National Hospice Study and in other research. The data presented in Table 3.17 reconfirm previous findings. Total expenditure for hospice patients was less than for conventional care patients in the last month of life, in both years. Conventional care costs were about 30 percent higher in FY85 and 43 percent higher in FY86. This was the period when most Hospice Beneficiaries enrolled in the program. The drop in monthly Benefit payments in earlier months reflects both a decline in Benefit services utilization of enrolled Beneficiaries and declines in the numbers enrolled. Total Part A expenditures for Hospice Beneficiaries in months 2 through 4 were higher than for conventional care patients in both years. However, Part A expenditure as a percentage of total expenditure over the last year of Hospice Beneficiaries' lives declined slightly between the years, from 83 to 82 percent.

As has been noted in earlier research on hospice care, the cost advantage enjoyed by hospice during the last month of life depends upon substitution of home care for inpatient services. As Figure 3.1 shows, most substitution under the Benefit does occur during this month.

Observers who have criticized analyses of hospice savings on grounds of selection bias point out that growth of the Benefit will probably lead to changes in its relative cost advantage, as individuals who are relatively more costly to treat in hospice than in conventional care are enrolled in the Benefit. To explore this concern, Tables 3.18 and 3.19 compare hospice and conventional care expenditures for two subgroups of the terminally ill with distinctive patterns in the last year of life: cancer and non-cancer patients, and patients who died at home or in a hospital.

Most Hospice Beneficiaries have been cancer patients, although the percentage of non-cancer patients rose slightly (from 6 to 7 percent) from FY85 to FY86. If an increase in non-cancer share occurs, data shown in Table 3.18 suggest that an increase in the Benefit cost advantage will probably result. In the last month of life, conventional care cancer patients were

Table 3.17

TOTAL MEDICARE REIMBURSEMENTS
HOSPICE BENEFIT AND CONVENTIONAL CARE PATIENTS

	FY85				FY86			
	Hospice (n=4,710)			Conventional Care (N=7,467)	Hospice (N=10,510)			Conventional Care (N=7,174)
	Hospice Benefit	Part A	Total	Total Part A	Hospice Benefit	Part A	Total	Total Part A
Last Month	$1,451	$1,650	$3,100	$4,096	$1,483	$1,589	$3,072	$4,397
Month 2	366	1,737	2,102	1,769	420	1,584	2,005	1,834
Month 3	122	1,330	1,452	1,243	139	1,337	1,476	1,241
Month 4	51	1,054	1,106	996	50	1,050	1,100	994
Month 5	28	872	899	856	32	844	876	876
Month 6	18	732	750	737	18	703	721	741
Month 7	11	625	636	684	11	634	645	662
Last Year of Life	2,075	10,229	12,304	13,111	2,186	9,986	12,173	13,421

SOURCE: AAI/HCFA Hospice Benefit Monthly File

FIGURE 3.1

MEDICARE TOTAL AND INPATIENT REIMBURSEMENTS, LAST SEVEN MONTHS OF LIFE
FY85, FY86 BENEFIT AND CONVENTIONAL CARE PATIENTS

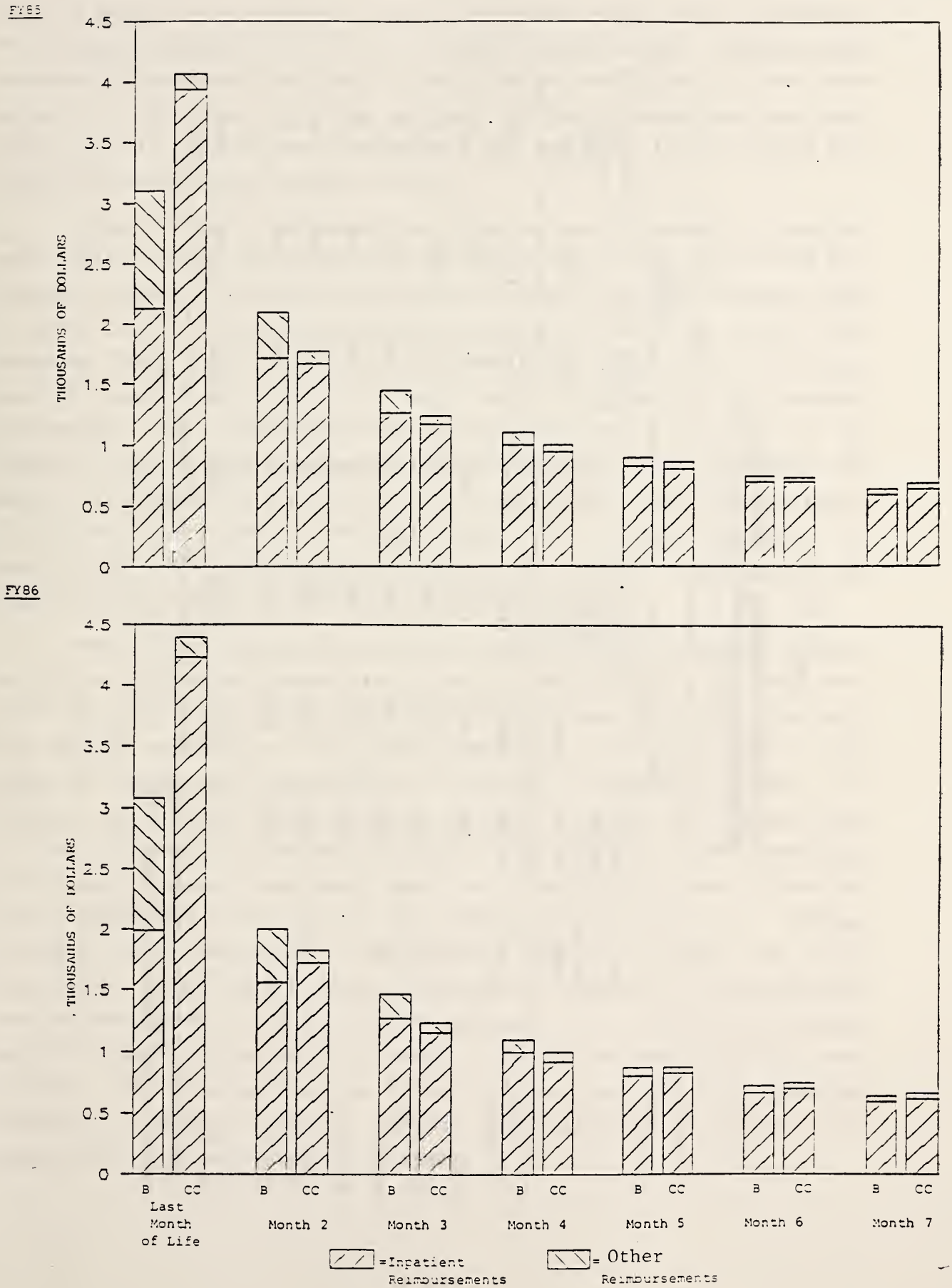

Table 3.18

TOTAL MEDICARE REIMBURSEMENTS BY CANCER/NONCANCER
FY86 HOSPICE BENEFIT AND CONVENTIONAL CARE PATIENTS

	Cancer				Noncancer			
	Hospice (n=9,738)			Conventional Care (N=3,624)	Hospice (N=758)			Conventional Care (N=3,550)
	Hospice Benefit	Part A	Total	Total Part A	Hospice Benefit	Part A	Total	Total Part A
Last Month	$1,497	$1,572	$3,069	$4,071	$1,297	$1,838	$3,135	$4,730
Month 2	426	1,584	2,010	1,757	350	1,619	1,970	1,912
Month 3	139	1,341	1,480	1,194	131	1,314	1,445	1,289
Month 4	48	1,054	1,102	883	74	1,019	1,093	1,108
Month 5	31	838	869	815	44	933	977	938
Month 6	16	696	712	661	42	816	858	823
Month 7	11	635	646	545	10	631	641	782
Last Year of Life	2,202	9,953	12,155	12,179	1,970	10,600	12,570	14,689

SOURCE: AAI/HCFA Hospice Benefit Monthly File

about 33 percent more expensive than Hospice Beneficiaries. The differential for non-cancer patients in this critical month was 51 percent. Although total last-month expenditures for Hospice Beneficiaries were higher for non-cancer patients ($3,135) than for cancer patients ($3,069), conventional care non-cancer patients ($4,730) were considerably more expensive in this period than conventional care cancer patients ($4,071)

Place of death influences the relative cost advantage of hospice. Among cancer patients who died in an inpatient setting, hospice was $425 more expensive in the last month of life than conventional care; for patients dying at home (or in another, non-hospital setting) hospice was $1,119 more expensive (Table 3.19). Lacking death certificate information, we defined place of death from claims file data, which are likely to be somewhat inaccurate. For conventional care patients, if the final date on the patient's last inpatient claim was within two days of date of death, the patient was assumed to have died in the hospital. For Hospice Beneficiaries, if all, or all but one, of the days covered by the final claim under the Benefit were reimbursed as general inpatient or inpatient respite care, the Beneficiary was assumed to have died as an inpatient.

Hospice cost less than conventional care overall, not because it was a cost effective approach regardless of site of death (it was, in fact, more costly in both cases as these data show), but because there were relatively more hospice beneficiaries (88 percent) who died at home, compared to the sample of conventional care patients, 37 percent of whom died at home. In addition, the costs of a home death, in the last month and over the last year of life, in hospice or conventional care, were lower than costs associated with a hospital death. Last-month costs for a hospital death were $5,998 for Hospice Beneficiaries and $5,573 for conventional care patients. Average last-month costs for patients who died at home were $2,656 and $1,537 respectively. Any decrease in the percentage of terminally ill conventional care patients dying in the hospital or increase in the proportion of Hospice Beneficiary hospital deaths could weaken or reverse an overall Benefit cost advantage. The evidence presented so far indicates that, far from increasing inpatient utilization, certified providers have maintained or increased the proportion of enrolled days spent at home.

Table 3.19

TOTAL MEDICARE REIMBURSEMENTS BY PLACE OF DEATH
FY86 HOSPICE BENEFIT AND CONVENTIONAL CARE CANCER PATIENTS

	Died at Home				Died in Hospital			
	Hospice (n=8,023)			Conventional Care (N=1,349)	Hospice (N=1,096)			Conventional Care (N=2,275)
	Hospice Benefit	Part A	Total	Total Part A	Hospice Benefit	Part A	Total	Total Part A
Last Month	$1,352	$1,305	$2,656	$1,537	2,974	3,024	5,998	5,573
Month 2	411	1,507	1,917	1,730	422	2,167	2,590	1,773
Month 3	123	1,294	1,416	1,333	119	1,573	1,692	1,112
Month 4	34	1,009	1,043	1,087	31	1,315	1,346	762
Month 5	18	809	827	994	16	983	999	709
Month 6	9	661	670	807	3	803	806	574
Month 7	6	615	622	715	2	704	705	444
Last Year of Life	1,969	9,325	11,294	10,750	3,569	13,279	16,848	13,027

SOURCE: AAI/HCFA Hospice Benefit Monthly File.

An Actuarial Approach to Estimating Net Benefit Costs

HCFA's Office of the Actuary developed a simple model for predicting the net costs or savings likely to be generated for Medicare by the Hospice Benefit. This approach compares costs incurred by terminally-ill cancer patients in conventional care within particular "windows" of time (for example, the last month of life) to costs incurred by cancer patients in hospice within comparable enrollment periods. The ratio of conventional care to hospice costs, for each window, is an estimate of the savings from hospice for that window. If the ratio were 1.10 for a one-month window, for example, every dollar spent on these hospice patients with enrollments of one or fewer months would represent a saving of $1.10 to Medicare in conventional care expenditure. If the ratio were .90, every dollar spent on hospice care would save only $0.90, a clear loss to the government. The average of all of the ratios, weighted by the distribution of Hospice Benefit patient days across each window, represents an estimate of the average net costs or savings attributable to the Hospice Benefit.

Analyses were conducted on the AAI/HCFA Hospice Benefit Actuarial File, which combined Part A expenditure data for:

- all conventional care patients in the Hospice Benefit evaluation sample with cancer diagnoses preceding each window (3,638 in FY85 and 3,479 in FY86);

- all Hospice Benefit cancer patients with complete claims records in the Benefit period, as well as valid enrollment and death dates, who died while in the Benefit and had no gaps in Benefit coverage (3,950 in FY85 and 8,773 in FY86).

Medicare expenditures were estimated as follows:

- Conventional care: All Medicare Part A expenditures associated with inpatient hospital episodes beginning and ending within the window were counted. This included the national DRG rate, plus an adjustment for passthrough and indirect medical education reimbursement (based on a methodology developed by HCFA). Days in the window not spent in a hospital were assigned the average non-inpatient Part A reimbursement for conventional care patients. This rate is a composite of skilled nursing, home health agency and other Part A reimbursable services, and was computed from data

in FY85 and FY86. Total conventional care expenditure per day is the sum of hospital and non-hospital expenditure, divided by the total number of days in the window.

- Hospice: Average Medicare expenditure per diem for hospice patients was computed as the sum of total Benefit plus regular Part A expenditure, within length of enrollment categories that matched the "windows" selected for conventional care expenditure.[1]

This approach differs from the OACT methodology in several respects. One of the most important differences was in the way in which a distribution of length of hospice stay was simulated by OACT from information on length of illness and length of enrollment from the National Hospice Study. OACT determined that a flat 18.7 percent rate best represented the proportion of a terminal cancer illness that would be spent enrolled in a hospice. In contrast, this Evaluation used actual length of enrollment distributions from FY85 and FY86 Benefit data. Expenditures of conventional care patients that would be "saved" by hospice enrollment over a given time period were based on the utilization of all conventional care patients eligible for a particular "window". For example, individuals were assumed eligible for a hospice enrollment of 10 days or less only if they had the first claim with a cancer diagnosis preceding the 10-day window. These individuals represented a variety of lengths of illness, but they all could have enrolled in the Benefit, given their diagnosis dates.[2]

Overall, hospice barely saved Medicare Part A expenditure in FY85 and 86, over the last 7 months of the average terminally-ill cancer patient's

---

[1]In the Phase II Report of this Evaluation, a 10 percent "add-on" to approximate Part B expenditures was included for both conventional and hospice patients. We did not replicate this approach here, because we did not have Part B data sufficiently detailed with respect to timing of service delivery to permit allocation to the windows in this analysis. As our later analysis of Part B reimbursements over the last year of life demonstrates, this probably means that total Medicare savings has been underestimated in this analysis.

[2]We found the use of a flat proportion to simulate length of stay arbitrary and distorting of the true enrollment distribution. Although our methodology does not directly control for length of illness differences between hospice and conventional care groups, it does better represent the distribution of Benefit lengths of enrollment without ignoring the constraints imposed by diagnosis date (only conventional care patients with diagnosed cancers are included in each window).

life. Table 3.20 shows that for every dollar of spending on Hospice Benefit enrollees, the government saved $1.04 in expenditure on terminally-ill conventional care patients. As other studies have shown, the hospice cost advantage is greatest for relatively short periods of enrollment. Enrollments longer than two months clearly do not save Medicare expenditure. The average Benefit enrollee cost less, because most had enrollment periods of less than two months.

There is some evidence that the hospice cost ratio increased, from 0.98 in FY85 to 1.07 in FY86. Of course, a one-year change of this kind should be treated with caution. There is no convincing evidence that the break-even point (one to two months) changed dramatically over this period. A longer time series would be needed to confirm or deny a real trend.

This reasonably straightforward comparison does not adjust for the many characteristics that might differ between Hospice Beneficiaries and conventional care patients, thereby confounding our ability to estimate hospice effects on costs. A multivariate adjustment method is presented later in this chapter. However, to test the sensitivity of the findings shown in Table 3.20, we removed from the analysis all patients (hospice and conventional care) with lengths of illness under 10 days. Recall that one of the most striking differences between hospice and conventional care patients is found in frequencies of very short illnesses (about 21% of conventional care patients and 14% of Hospice Beneficiaries were diagnosed within one month of death). It can be argued that this overstates the number of conventional care patients that are reasonable comparisons in this study, since relatively few individuals diagnosed near death (and usually during a hospital stay) will have the time or inclination to elect the Hospice Benefit. By removing patients with illnesses less than 2 weeks, we lowered the "diagnosis within the last month of life" cell in the conventional care distribution, from 21% to about 13%. (The hospice percentage drops minimally, by about 2 percentage points). Recomputing the Table 3.20 estimates without these patients lowers the rate of saving, as expected, but not a great deal, from 1.04 to 1.03 (the 1986 savings ratio declines from 1.07 to 1.05, and 1985 remains virtually unchanged).

All of the hospice cost advantage was generated by Beneficiaries served in freestanding and HHA-based providers; hospital-and SNF-based providers tended to be more expensive than conventional care. Table 3.21 shows that freestanding hospices exerted the most positive leverage, saving $1.12

Table 3.20

NET MEDICARE HOSPICE
BENEFIT SAVING, BY ASSUMED
LENGTH OF ENROLLMENT

Length of Enrollment Cohort	N[2]		Total Reimbursement Per Day: Hospice Beneficiaries		Total Reimbursement Per Day: Non-Hospice Beneficiaries		Net Dollars Saved[1] Per Dollar Spent	
	FY85	FY86	FY85	FY86	FY85	FY86	FY85	FY86
1-5	7900	17546	$87	$86	102	113	$1.18	1.31
6-10	25248	57392	94	91	99	109	1.05	1.20
11-15	31369	74074	93	91	95	103	1.02	1.13
16-20	34146	82980	86	88	92	100	1.07	1.14
21-25	35236	87193	86	85	90	97	1.05	1.13
26-30	35336	87920	91	85	88	93	0.96	1.10
31-45	39026	99674	78	72	79	82	1.01	1.14
46-60	31323	81726	71	71	74	75	1.03	1.06
61-75	22372	60180	73	70	68	67	0.93	0.96
76-90	15853	41417	63	73	63	62	0.99	0.86
91-120	10761	20995	63	75	56	54	0.88	0.72
121-150	7453	15989	56	67	50	50	0.90	0.74
151-180	4965	9268	71	78	47	45	0.66	0.58
181-210	3324	6452	70	72	44	42	0.63	0.59
Average Net Dollars Saved, By Year							.98	1.07
Average Net Dollars Saved							1.04	

[1]Defined as non-hospice reimbursement (saved) divided by hospice reimbursement (spent).

[2]Total Hospice Benefit patient days in each length-of-enrollment cohort.

Source: AAI/HCFA Hospice Benefit Actuarial File

Table 3.21

NET MEDICARE HOSPICE BENEFIT SAVING[1], BY HOSPICE TYPE
BY ASSUMED LENGTH OF ENROLLMENT

Length of Enrollment Cohort	Freestanding FY85 (N=1431)	Freestanding FY86 (N=5164)	Hospital-Based FY85 (N=1087)	Hospital-Based FY86 (N=1440)	SNF-Based FY85 (N=206)	SNF-Based FY86 (N=158)	Hospital/SNF-Based FY85 (N=1293)	Hospital/SNF-Based FY86 (N=1598)	HHA-Based FY85 (N=1179)	HHA-Based FY86 (N=2011)
1-5	1.35	1.40	1.00	1.19	0.74	1.13	0.96	1.18	1.26	1.22
6-10	1.20	1.24	0.87	1.16	0.71	0.65	0.84	1.10	1.16	1.16
11-15	1.11	1.20	0.85	1.13	0.86	0.55	0.86	1.12	1.13	1.04
16-20	1.29	1.25	0.99	1.00	0.62	0.97	0.87	0.99	1.10	1.03
21-25	1.08	1.18	1.11	1.00	0.52	0.73	0.93	0.97	1.14	1.17
26-30	1.14	1.13	0.93	1.08	0.69	0.68	0.89	1.07	0.86	1.11
31-45	1.12	1.20	0.96	1.06	0.69	0.76	0.89	1.03	1.04	1.10
46-60	1.24	1.10	0.92	0.98	0.64	0.93	0.87	0.97	1.13	1.05
61-75	1.11	1.00	0.88	0.91	0.90	0.62	0.88	0.84	0.85	0.98
76-90	1.10	0.92	1.01	0.78	0.85	0.61	1.00	0.77	0.89	0.82
91-120	1.25	0.95	0.87	0.72	0.56	0.54	0.84	0.70	0.96	0.68
121-150	0.64	0.74	0.91	0.75	-[2]	0.50	0.91	0.72	0.92	0.76
151-180	-[2]	0.44	0.61	0.59	0.42	-[2]	0.58	0.59	0.92	0.68
181-210	-[2]	0.51	0.61	0.63	0.66	0.46	0.62	0.58	0.82	0.73
Average Net Saved, By Year	1.16	1.11	0.90	0.90	0.70	0.65	0.87	0.87	1.03	0.99
Average Net Saved	1.12		0.90		0.68		0.87		1.01	

[1]Defined as non-hospice reimbursement (saved) divided by hospice reimbursement (spent).

[2]No Hospice Beneficiaries in this cohort.

Source: AAI/HCFA Hospice Benefit Actuarial File

for every dollar spent. Hospice care was cost effective in freestanding providers from two to four months before death. HHA-based average savings, at $1.01 for every hospice dollar, matched the overall average. Savings appear to have been reversed, among HHA-based providers, from $1.03 to $0.99; freestanding hospice savings also declined from FY85 to FY86.

On average, hospice in hospital-based providers was somewhat more expensive than conventional care, while SNF-based hospice care clearly cost much more. Both groups showed stability or slight deterioration, from FY85 to FY86. Hospital-based care maintained a steady net cost ($0.90 for every hospice dollar spent). SNF-based providers increased their relative disadvantage, from $0.70 to $0.65.

Savings estimates based entirely on Medicare Part A reimbursements probably understate the total savings to the Federal Government associated with the Hospice Benefit.

- Hospice Beneficiaries' Part B payments averaged $350 less than conventional care in the last year of life. This issue is discussed in greater detail later in this chapter.

- Conventional care patients are more likely than Hospice Beneficiaries to incur Medicaid expenses in the last months of life. HCFA analysts, using merged 1980-81 Medicare and Medicaid data for "crossover" beneficiaries (most of whom would not, as early as 1981, have been in a hospice program) showed that total Medicare and Medicaid nursing home payments averaged 8 percent of total reimbursement in the last month of life. Most nursing home services for crossovers are paid through Medicaid. Medicaid also paid for 22 percent of total physician services incurred in the last month. Medicaid drug reimbursements represented 0.2 percent of total Medicare and Medicaid expenditure during the last month of life.

Although there has been no research to determine how much, if any, Medicaid reimbursement has been paid to Medicare beneficiaries while they were enrolled in a certified hospice, it is not likely to have been more on average than that incurred by conventional care patients.

The average lengths of enrollment among Beneficiaries in the expenditures analyses were shorter than averages shown in Table 3.8, because they were required to have complete Benefit claims histories. If those excluded did have Benefit claims, which had not yet appeared in the system, then our Benefit cost estimates are understated. If, however, these enrollees incurred no expenditures, then our estimates may be overstated.

Adjusted Estimates of the Net Cost of the Hospice Benefit

The actuarial analysis presented above is a relatively straightforward approach to the problem of estimating savings. However, it is difficult to attribute cost differences between hospice and conventional care patients to the Benefit, as opposed to differences in patient mix between groups. Because the actuarial approach combines disparate sources of data to produce a simulated contrast, we cannot draw statistical inferences regarding the Benefit "effect" on Medicare reimbursement.

In this section, estimates of the net difference in reimbursement between hospice and conventional care cancer patients adjusted for patient mix are presented. Data for this analysis come from the AAI/HCFA Hospice Benefit Monthly File, and include total Benefit and regular Part A reimbursement information, by month for the last seven months of life. Cancer patients were selected for this analysis, as with the actuarial analysis, because it was necessary to estimate a proxy "diagnosis" date for conventional care patients' terminal conditions. The reader should also keep in mind that hospices studied over the past several years have always been shown to treat 90 percent or more cancer patients; this pattern is unlikely to change in the near future.

Adjusted estimates of net reimbursement differentials are based on multivariate regressions of total monthly reimbursement on:

- Patient mix variables, including age, gender, race, diagnosis and prior utilization indicators;

- Program variables: in regressions pooling both Hospice Benefit and conventional care observations, a hospice variable indicated Beneficiary status; in regressions of Beneficiaries only, designed to test for differences by hospice type, three separate hospice type variables were used. In this analysis, hospital-based and SNF-based observations were pooled. The size of the SNF-based patient sample was too small to yield statistically meaningful results.

Separate regressions were run for each length of enrollment cohort (7 cohorts, defined according to the month in which enrollment occurred) for up to 7 months (for the longest enrollment cohort, 181-210 days). All regressions used on these analyses are included in Appendix A.

Several factors contributed signficantly to expenditure levels. In the last month of life, spending increased with age, but at a decreasing

rate. The principal cancers (colon, lung, breast and prostate) were less expensive than "other" cancers; leukemia was more expensive. Patients in certified hospice counties incurred higher expenditures than those in non-certified and non-served counties. Those who had any prior inpatient utilization tended to spend somewhat less than those who did not. For those with prior utilization, however, increased amounts were associated with increased expenditures during the last month of life.

Hospice expenditures were compared to the expenditures of two groups of conventional care patients: those living in certified hospice counties, and those living in other (non-certified and non-served) sample counties. Hospice expenditures for an "average" enrollee, in FY85 and FY86, were:

FY85: INTERCEPT + HOSPICE + CERT + EXPO $(\bar{X}_{85})$ + B $(\bar{X}_2)$

FY86: INTERCEPT + HOSPICE + FY86 + HOSP86 + EXPO $(\bar{X}_{86})$ + B $(\bar{X}_2)$

where HOSPICE (=1) if patient died as an enrollee

CERT (=1) if patient resided in a certified county; most certified hospice patients lived in certified counties

FY86 (=1) if patient died in FY86

HOSP86 = HOSPICE * FY86

EXPO measures the effect on expenditure of exposure to the program (number of certified hospices in the county times days from certification to date of patient's death) measured at mean for exposure for FY85 $(\bar{X}_{85})$ and FY86 $(\bar{X}_{86})$

B, a vector of coefficients that measure other influences on expenditures (age, diagnosis, etc.)

Conventional care expenditures are defined in the following way:

Certified county residents:

FY85: INTERCEPT + CERT + EXPO $(\bar{X}_{85})$ + B $(\bar{X}_2)$

FY86: INTERCEPT + CERT + FY86 + EXPO $(\bar{X}_{86})$ + B $(\bar{X}_2)$

Other (residents of non-certified and non-served counties):

FY85: INTERCEPT + B $(\bar{X}_2)$

FY86: INTERCEPT + FY86 + B $(\bar{X}_2)$

The adjusted expenditure differentials of interest are:

Hospice - Conventional Care (in certified counties)

FY85: HOSPICE

FY86: HOSPICE + HOSP86

Hospice - Conventional Care (in other counties)

FY85: HOSPICE + CERT + EXPO $(\bar{X}_{85})$

FY86: HOSPICE + CERT + EXPO $(\bar{X}_{86})$ + HOSP86

Table 3.22 shows adjusted savings ratios (conventional care/hospice expenditure) for FY85. The first figure in each cell represents a comparison of expenditures for hospice and conventional care patients' in certified counties; the second compares hospice to conventional care patients in other counties.

Adjusted hospice savings were large for most cohorts in the last month of life. For Beneficiary enrollments of up to five months, the rate of savings relative to conventional care patients in certified counties in the last month of life varied from $1.32 to $1.50, for every dollar spent, adjusting for patient mix factors. Compared to patients in other sample counties, the average Hospice Beneficiary generated from $1.16 to $1.28 in savings over a comparable period. These savings are based on statistically--significant estimates. Before the last month, however, the Benefit imposed a net cost at worst, or has no statistically-significant effect, at best. For example, the net cost ratio based on the certified county sample for

Table 3.22

ADJUSTED TOTAL MEDICARE REIMBURSEMENT FOR CANCER PATIENTS BY MONTH
COMPARISON OF CC AND BENEFIT PATIENTS BY LENGTH OF ENROLLMENT COHORT, FY85

CC mean saving ratio Hosp mean	Length of Enrollment						
	<1 month	1-2 months	2-3 months	3-4 months	4-5 months	5-6 months	6-7 months
Last Month of Life	1.32* 1.16	1.49* 1.23	1.48* 1.25	1.42* 1.22	1.50* 1.28	0.93 0.80	3.77* 3.34
Month 2		0.82* 0.66	0.91 0.78	0.88 0.79	0.88 0.78	0.67 0.63	1.35 1.24
Month 3			0.73* 0.61	0.72 0.62	0.71 0.66	0.61 0.62	0.86 0.86
Month 4				0.84 0.72	0.71 0.67	0.46 0.44	0.73 0.70
Month 5					0.83 0.81	0.65 0.60	0.61 0.50
Month 6						0.92 0.85	0.56 0.53
Month 7							0.75 0.68
Total for All Months After Hospice Entry	1.32* 1.16	1.14* 0.93	1.04 0.89	0.99 0.86	0.96 0.86	0.72* 0.66	1.06* 0.97

NOTE: Conventional care patients' enrollment cohort is determined by the date of his/her first cancer diagnosis. For example, a patient whose cancer diagnosis came 82 days before death would be included in the one month, 1-2 month, and 2-3 month columns, since he/she could have been enrolled for any of those periods. Hospice patients are included only in the column in which their actual enrollment falls. CC means are actual reimbursement means for the conventional care group, while the hospice means represent the "hospice adjustment" to the CC mean estimated in multivariate regressions estimated for each cell. The complete regressions appear in Appendix A. The saving ratio is the ratio of CC to hospice mean reimbursement. The first ratio in each cell is based on adjusted savings relative to CC patients in certified counties. The second compares Benefit to CC patients in other sample counties.

*Ratio is significantly different from 1 at 10 percent level of significance or better.

Table 3.23

NET ADJUSTED[1] MEDICARE HOSPICE BENEFIT SAVING
IN THE LAST MONTH OF LIFE
BY HOSPICE TYPE
FY85

Length of Enrollment	Hospice Type		
	Freestanding	HHA-Based	Hospital/SNF-Based
Less than 30 days	1.45	1.04	0.94
30-59 days	1.59	1.19	1.09
60-89 days	1.63	1.13	1.15
90-119 days	2.71	0.78	0.82
120-149 days	3.24	1.03	0.79
150-179 days	0.38	4.55	2.07
180-209 days	0.76	2.92	2.92

[1]Savings ratios (Medicare Part A Conventional Care Expenditure/Hospice Beneficiary Part A/ expenditure) adjusted for age, gender, race, prior utilization, location factors.

Source: AAI/HCFA Hospice Benefit Monthly File

beneficiaries enrolled between one and two months before death was $0.82, a significant net cost in the second month, but $1.49, a significant net saving in the last month. For Beneficiaries who enrolled four to five months before death, the estimated net cost ($0.88) was not statistically significant, but the savings ratio in the last month ($1.50) was significant. Averaging over all months, by enrollment cohort (the last line in Table 3.22), we find that there are statistically significant savings for enrollees of two months or less, no significant difference for enrollees between two and five months, a significant net cost ($0.72) for those enrolled between five and six months, and a significant saving for the longest enrolled group.

A "bottom line" estimate of adjusted net costs of the Benefit can be computed by averaging net cost ratios in all of the enrollment/month cells, weighting each ratio by the appropriate numbers of Hospice Beneficiaries. The average adjusted FY85 net cost ratio for the certified sample alone, was 1.26. Savings based on the comparison with non-certified and non-served counties were 1.09. The statistical significance of these estimates are impossible to determine, because the averages represent sums of ratios across different groups, combining significant and insignificant regression coefficients. Nonetheless, these estimates show larger savings than indicated by the unadjusted actuarial estimates. Estimates for FY86 show a slight increase in estimated savings to 1.31 for the "within certified counties" ratio and 1.12 for the certified/other ratio. A note of caution is in order, however. Even though individual coefficients in the regressions used in this analysis were often highly significant, the overall fit of the models left much to be desired. No model explained more than 7 percent of total variation in expenditure in any given month. This performance would have been improved with additional clinical information (such as functional status) that proved important in previous studies of hospice utilization and expenditure.

Adjusted estimates of net costs by hospice type were also computed. Regressions on which these estimates are based are included in Appendix A. Because of small sample sizes, individual coefficient estimates by hospice type were quite imprecise, particularly for periods before the last month of life. Table 3.23, which reports savings ratios comparing expenditures entirely within certified hospice counties, shows a performance pattern among provider types similar to that revealed in the unadjusted estimates of Table 3.21: freestanding hospices show the largest saving, and facility-based hospiced show small savings or net costs.

The Impact of the Medicare Hospice Benefit on Total Medicare Part A Expenditure at the County Level

In analyzing the net costs of the Benefit so far, we have explicitly adjusted estimates for the confounding influence of patient mix. However, we realize that many critical indicators of relevance that might have been helpful in controlling for patient selection bias simply were not available.

Moreover, as the analysis in Chapter 2 demonstrated, the cost advantage or disadvantage of the Benefit probably depends on at least two other major factors:

- the distribution of providers, by hospice type, size, relative managerial efficiency and other characteristics; the available data indicate that certified hospices are different from non-certified hospices, so that "provider self selection" is probably a concern in interpreting the data;

- provider distributions across regions and time may affect savings estimates as well.

Analyses in Chapter 2 demonstrated that "certified hospice counties" were different health care markets than the average United States county. Table 3.24 shows that the marginal certified counties were not significantly different in these characteristics from the initial population of certified counties. Counties with hospices first certified in FY86 were smaller, less urbanized and slightly less well supplied with health care resources than the average county with a hospice first certified in FY 84.

In addition, certified hospices have tended to locate in counties with high average costs per day for terminally-ill Medicare cancer patients. Table 3.25 shows that, taking all patients together (certified hospice and others), the average total Part A and Benefit expenditure per day alive in the last year of life was about $5 per diem higher in "certified" hospice counties than in counties with at least one non-certified hospice in FY85. The gap between certified and non-served counties (which had no known hospice programs) widened slightly, from nearly $6 to $7.

These disparities put a heavy burden on the analyst seeking to evaluate Benefit impact. If market area characteristics were more homogeneous across counties with and without certified hospice programs, the patient-level analyses would provide more reliable estimates of net costs. As it is, the fact that more certified hospices are in high-cost market areas, where both

Table 3.24

SAMPLE COUNTY CHARACTERISTICS,
BY YEAR FIRST HOSPICE CERTIFIED FOR CERTIFIED COUNTIES
FY84 - FY86

Characteristic	Certified Counties Certification Year FY 84	FY 85	FY 86	All Sample Counties
Median education	12.03 years	12.04 years	12.05 years	11.89 years
Number of hospitals with hospice program	1.19	1.02	0.98	0.48
Nursing home beds/ 100,000 population	626	624	633	747
Population	561,000	516,000	484,000	219,000
Population density	1,686 psm	1,743 psm	1,601 psm	629 psm
Percent of population with Medicare Part A	12.9%	12.7%	12.9%	13.5%
Specialists as percent of patient care physicians	86.2%	87.6%	87.3%	72.1%
Percent of population in HMOs	4.9%	4.5%	4.1%	2.3%
Percent of population white	86.9%	87.5%	87.0%	89.0%
ICU beds/100,000 population	0.34	0.33	0.32	0.28
Megavolt rad units/ 100,000 population	0.008	0.008	0.008	0.007
Hospital beds/100,000 population	5.3	5.2	5.2	4.8

Source: AAI/HCFA Hospice Benefit County File

Table 3.25

AVERAGE TOTAL MEDICARE HOSPICE BENEFIT PLUS PART A REIMBUREMENTS PER DIEM, BY COUNTY TYPE
FY85, FY86

County Type[a]	FY85	FY86
Certified	$49.0	$50.3
Noncertified	44.9	45.4
Nonserved	43.4	42.7

[a]Certified hospice counties had one or more certified hospices.

Noncertified hospice counties had one or more noncertified hospices in FY 85, and no certified hospices.

Nonserved hospice counties had no hospice providers in FY 85.

Source: AAI/HCFA Hospice Benefit County File

conventional and Benefit expenditures are likely to be high, suggests that the average effect across all counties should be small or perhaps counter to expectation (that the Benefit will reduce total expenditures).

Given the number of possible interacting effects, at the beneficiary, provider and geographical level, that might affect the net cost impact of the Hospice Benefit, we conducted a county level analysis that controlled only for certain market-level forces, and tested the hypothesis that the existence of the Benefit and the penetration of the Benefit (measured by the total number of hospice days incurred in a certified county) would have no measurable impact on total Medicare Part A expenditure per beneficiary day alive (for all terminally ill cancer patients, in the last year of life).

Over the period FY85 and FY86, the presence of a certified hospice program had no measurable effect on Medicare payments per day alive, after controlling for such market level factors such as population, per capita income and percent of population eligible for Medicare Part A (Table 3.26). Although the coefficients that measure the dollar difference between certified counties and both non-certified and non-served counties are negative (as one would expect from the unadjusted averages), they are insignificant, suggest ing that certification status had no effect on market average costs.

Does hospice penetration of the market make a difference? If so, we should expect to find that increases in total hospice days would be associated with decreases in expenditure per day alive. The hospice day coefficient is indeed negative, but not at all significant.

This analysis shows that, despite evidence for saving based on fine-tuned comparisons between Beneficiary and conventional care samples, the Benefit Program has not measurably affected total Medicare expenditure on terminally-ill cancer patients.

3.3 Total Medicare Part A and B Expenditure for Terminally-Ill Beneficiaries in The Last Year of Life

The Medicare Hospice Benefit covers institutional and ambulatory care, much of which, for a terminally-ill patient who did not elect the Benefit, would be reimbursable under Medicare Part A or B. So far, however, the discussion of federal payment for hospice has been confined to evidence for a program effect on Part A. This section discusses the evidence on Part B services used by hospice and non-hospice Medicare beneficiaries.

Table 3.26

ADJUSTED ESTIMATES OF HOSPICE BENEFIT
IMPACT COUNTY AVERAGE MEDICARE PART A
REIMBURSEMENT PER DIEM
FY85, FY86

	Net Effect (Dollars Per Diem)	T-Statistic	Prob>|T|
Noncertified-Certified			
FY85	-$0.99	-0.90	0.369
FY86	-$0.58	-0.43	0.671
Nonserved-Certified			
FY85	+$0.68	0.60	0.550
FY86	-$2.20	-1.68	0.093
Total Hospice Enrollment Days	-$0.0002	-0.202	0.840

Source: AAI/HCFA Hospice Benefit County File.

Beneficiaries who elect the Hospice Benefit are required to give up their regular Part A coverage for any care related to their terminal condition; no such requirement applies to Part B coverage. Enrollees may receive physician services through the Benefit, from physicians employed by their hospice provider. These services are reimbursed directly to the provider as a Benefit payment. However, enrollees may continue to use the Part B reimbursable services provided by their own physicians, for care related or unrelated to their terminal conditions. Part B payments records, extracted from the Medicare Automated Data Retrieval System (MADRS) for patients in the Hospice Benefit Evaluation sample who died in FY85, were supplied by HCFA. Since no dates of service for individual procedures were available, it was not possible to assign Part B expenditures to months during the last year, as was done with Benefit and regular Part A claims. Therefore, it is impossible to determine precisely how much of any difference in Part B expenditure between hospice and non-hospice patients is due to substitution or augmentation in Part B and Benefit services.

With these caveats in mind, the following are salient findings from the analysis:

- the average conventional care patient incurred $350 more Part B expenditure in the last year of life than the average Hospice Beneficiary;

- there were major differences among beneficiaries by hospice type, in total Part B expenditures, with patients in SNF-based hospices incurring the most ($4308) and patients in hospital-based hospices the least ($2872);

- utilization of Part B-reimbursed services among hospice patients correlated negatively with length of enrollment: every additional day of enrollment was associated with about $10 less in annual Part B expenditure;

- conventional care patients cost $712 more than Hospice Benefit patients in combined Part A and B expenditure in the last year of life, a difference which virtually disappears when adjusted for patient mix and region; SNF-based hospice patients were over $8,000 more expensive than all other hospice and conventional care patients.

Part B Expenditures

Part B expenditures for conventional care patients, at $3,725, were about $350 more than Part B expenditure for hospice patients as Table 3.27

Table 3.27

MEDICARE PART B AND TOTAL MEDICARE REIMBURSEMENT
LAST YEAR OF LIFE
HOSPICE (BY TYPE) AND CONVENTIONAL CARE PATIENTS
FY85

	Conventional Care (N=7467)	Hospice				
		Total (N=5991)	Freestanding (N=2495)	HHA-Based (N=1828)	Hospital-Based (N=1413)	SNF-Based (N=255)
Percent with Part B Claims	97.7%	93.2%	93.4%	95.9%	88.5%	97.6%
Total Part B Reimbursement	$3,725	$3,369	$3,613	$3,231	$2,945	$4,319
Part B as Percent of Total Medicare Reimbursement	24.7%	24.7%	27.5%	24.6%	20.7%	21.8%
Total Medicare Reimbursement (Parts A + B)	$15,402	$14,689	$14,111	$14,172	$14,687	$24,063

Source: AAI/HCFA Medicare Part B Analysis File.

shows. This finding suggests that the Hospice Benefit might substitute for some Part B reimbursable services. However, as noted earlier, the data do not permit the month-by-month comparisons of Part B utilization that would be helpful in testing this hypothesis. Moreover, there were still larger differences in expenditure levels among hospice types. The average SNF-based hospice patient incurred $4308, compared to hospital-based hospice patients, who averaged $2872. Part B expenditures were a larger proportion of total Medicare expenditure for patients in freestanding and HHA-based hospices (26.6 and 23.2 percent respectively). SNF-based patients, with total annual Medicare expenditure of over $24 thousand, spent proportionately less on Part B services (17.8 percent).

Despite Part B data limitations, there is circumstantial evidence that the Benefit has substituted for some Part B expenditure. Persons who enrolled in the Benefit and left, either to return later or to die outside the program, tended to incur higher Part B expenditure than beneficiaries who enrolled and continued in the program until death. Persons with "gaps" between Benefit periods (about 0.3 percent of all hospice beneficiaries) averaged $4076, compared to the rest who averaged $3372. Persons who left the program, either before the end of the maximum 210-day period or who were still alive at the end of 210 Benefit days (about 6 percent of all beneficiaries), incurred $3621 in Part B expenditures, compared to $3357 for those who died in the program. Of course, these subgroups also generated more Part A expenditure than the average hospice patient, over $1000 more for persons who quit and over $3000 more for persons with gaps between Benefit periods.

In fact, there is strong evidence that among Hospice Beneficiaries, Parts A and B utilization are positively correlated. Hospice patients with some regular Part A services in the last year of life had more Part B ($3685) than patients with no Part A, whose average Part B expenditures were $1468. Most regular Part A reimbursement covers hospitalization. Hospice patients who had some Part A-reimbursed home health care had even more Part B expenditure ($3993, compared to $2852 for those with only Part A hospital or no Part A services).

Parts A and B expenditures for hospice patients correlated positively as a rule. We estimated a correlation coefficient of +0.50 between Part B and Part A hospitalization payments. Smaller positive correlations between Part B and Part A home health (+0.14) and skilled nursing (+.04) were also observed. This correlation among components of Medicare expenditure is not

surprising. Almost half of physician Part B payments cover services delivered to patients in hospitals. Very ill patients need skilled services in a variety of settings. Part A home health services seldom substitute for an inpatient hospital stay, even if the availability of aftercare capacity shortens the number of hospital days required. SNF services similarly complement, rather than substitute for, acute hospital services. Part B services are most concentrated around acute episodes of illness. Therefore, the fact that persons with gaps and deaths outside the Hospice Benefit program have higher Part B expenditure than other hospice patients is not convincing evidence of Benefit/Part B substitution. These could be patients with greater needs than the average hospice enrollee, needs that patients and their families look to satisfy through care outside the Benefit.

More convincing evidence is provided by the correlation between length of enrollment and regular Medicare expenditure. We estimated negative correlations between total regular Part A and Part B expenditures with length of enrollment, suggesting that enrollees with longer stays in the Benefit used less of all Part A and B services. Both coefficients are statistically significant, and the size of the correlation coefficients are almost identical, at about -0.09 for Part A and -0.10 for Part B. The argument advanced earlier in this chapter for Medicare savings was based in part on the concept of substitution, of Benefit payments for regular Part A payments, the majority of which cover hospital stays. Using less well-articulated data, we are prepared to make a similar argument for Part B services.

Multivariate estimates confirm these findings. Table 3.28 shows estimates of the effects of selected patient and provider characteristics on Part B expenditure, adjusted for the influence of region in which the patient enrolled in the Benefit, condition (7 cancer types plus non-cancer) gender and race.[1]

---

[1]There were several statistically significant effects in the coefficients not reported directly in Table 3.28. The regression may be found in Appendix A. Most of the regional variables were statistically significant, suggesting only that they differed from the excluded region (region 10). Part B expenditure in East Coast regions were higher than in West Coast regions. Inclusion of these variables controls for fee and charge variation among areas, as well as for differences in practice patterns. The medical conditions variables reflected certain general patterns that appared in a regression of total Medicare spending patterns as well: colon and breast cancers were associated with lower than average spending, while urinary cancer patients incurred higher than average expenditures. Gender and race had no statistically significant association with Part B expenditure; the only

Table 3.28

MEDICARE PART B AND TOTAL MEDICARE REIMBURSEMENT
LAST YEAR OF LIFE
ADJUSTED ESTIMATES OF HOSPICE, HOSPICE
TYPE, LENGTH OF ENROLLMENT, AGE
EFFECTS
FY85

Effects	Part B Reimbursement	Total Medicare Reimbursement
Hospice- Conventional Care	-$235 (-3.03)	-$8.67 (-0.04)
HHA - SNF-Based	-$690 (-2.97)	-$8,253 (-10.35)
HHA - Hospital-Based	+$326 (2.59)	+$171 (0.39)
HHA - Freestanding	-$219 (1.67)	+$106 (0.23)
Hospital-Based- SNF-Based	-$1,016 (-4.49)	-$8,424 (-10.84)
Hospital-Based - Freestanding	-$545 (-410)	-$65 (0.14)
Freestanding - SNF-Based	-$471 (-203)	-$8,359 (-10.51)
Age	+$117 (2.11)	+$191 (0.99)
Age Squared	-$112 (-2.99)	-$2.28 (-1.77)
Length of Enrollment	-$10.40 (-2.94)	+$42.59 (+3.50)

Source: AAI/HCFA Part B Analysis File.

Note: t-statistics in parenthesis. Complete regressions may be found in Appendix A.

Differences among patients by hospice type remain large and significant, after adjustment for other factors; in absolute value, they are smaller than the unadjusted differences reported in Table 3.27. For example, after accounting for the various casemix and regional factors that might affect Part B expenditure patterns, the model estimates an average difference between HHA-based hospice patients and hospital-based patients of $326, compared to an unadjusted average of $351.

As they aged, patients used fewer Part B services. Although the age coefficient shows an increase of $115 for each year added, the square of age coefficient reduces Part B expenditure by $1.10. For elderly patients, this negative coefficient dominates; younger patients, in their 40's, tended to spend more as they aged.

Longer Benefit enrollments were clearly associated with less Part B expenditure. Adjusting for all other measured influences on Part B (hospice type, region, age, medical condition, race and gender), each additional Benefit day means a reduction of $10.45 in annual Part B spending. This effect might be attenuated by factors not measured in this expression, as suggested by the positive coefficient on the squared value of length of enrollment. However, this coefficient is not statistically significant.

Increased length of enrollment had a strong positive effect on total annual Parts A and B expenditure, adding about $43 for each additional enrolled day, after adjustment for patient mix, region and hospice type. The difference in total annual cost among hospice types within the freestanding/hospital-based and HHA-based groups is statistically insignificant. However, each averaged over $8000 more than the average SNF-based patient.

Hospice patients incurred $235 less in Part B services than non-hospice patients, after adjusting for patient mix and regional effects, a much narrower difference than the unadjusted estimate of $356 (see Table 3.27). When all Part A and B expenditures are combined, however, there is no statistically significant difference between Medicare spending on terminally-ill beneficiaries in hospice and non-hospice setting. The $8.67 hospice

---

notable relationship was an (insignificant) lower level of spending among blacks than whites. Both apparently spent less than other non-whites. The regression explained about 6.5 percent of total variance, with a total F-value of 12.3.

"advantage" has a level of significance close to 1.0, equivalent to a zero level of confidence. This finding reinforces findings in the county-level analysis, that showed no effect of certification status or of the relative intensity of hospice penetration (total Benefit days) on total Medicare Benefit and Part A expenditures.

CHAPTER 4

THE FUTURE OF THE MEDICARE HOSPICE PROGRAM

The Medicare Hospice Benefit, although unique in many of its design features, operates through a prospective rate structure. With the exception of the 25 participants in the Medicare demonstration, hospices in the United States never experienced the incentives associated with cost-based reimbursement. Since these providers had never been forced to account for costs within the traditional Medicare format, few had developed systems for allocating direct and indirect costs, or for relating charges to costs. For its part, HCFA lacked comprehensive historical data on provider costs and charges that could have been used to set rates. In setting national DRG rates, upon which Medicare's prospective payment system for hospitals were based, HCFA drew on several years of Medicare Part A claims and provider cost reports. In setting the Hospice Benefit rates, HCFA had only Part A claims generated by participants in the demonstration, and effectively no useful provider cost report information.

In its initial form, the Benefit was attacked as unfair to providers and flawed by its reliance on demonstration data. Congress modified the Benefit, responding to industry concerns regarding the level of the per diem rates, the stringency of the core services requirement and the risks associated with enrolling beneficiaries who might require services beyond the 210-day maximum benefit period. These changes may improve the capacity of the hospice industry to withstand pressures from within the health care system, generated by increased competition for patients and funds. However, they also carry with them the potential for making hospice less cost effective.

This section of the report projects Medicare reimbursements for hospice care, and implied cost effects through 1992, under a variety of assumptions. The implications of past changes to the program are explored. Program characteristics that have been criticized are reviewed, and the effects on Medicare reimbursements of addressing these issues are simulated.

4.1 Medicare Hospice Reimbursement Projections

In order to study the effects of program modifications on Medicare reimbursement, project analysts developed a system of accounting relationships

to describe utilization and payment for terminally-ill Medicare cancer patients. The system included a "hospice" model, that predicts Medicare reimbursement for beneficiaries in both certified hospice programs and in non-hospice programs. It also includes a "non-Benefit" model, that simulates Medicare reimbursements in a hypothetical world without the Benefit. These two models in turn jointly simulate net costs each year, defined as the difference between Medicare reimbursements with hospice and without it. "Net costs" in these predictions may not be due entirely to hospice, because reimbursements are compared for the last year of life, rather than over standardized enrollment periods as in chapter 3. The object of this exercise is not to recompute hospice savings in another manner but rather to explore the implications for Medicare of factors that affect both hospice and non-hospice care

The hospice model includes several components:

- a demand component, that forecasts the number of terminally-ill Medicare beneficiaries with cancer who might choose the hospice alternative in order to project total Beneficiaries and a hospice "share of total patient days";

- a supply component, that forecasts the number of Medicare enrollees hospices would be likely to enroll each year, based on the number of certified hospices, by type, the number of hospices actually participating by enrolling Medicare Hospice beneficiaries and submitting claims and the number of Medicare enrollees per provider, by hospice type; in the simulation exercise, hospital-based and SNF-based hospice have been combined into one type, while freestanding and HHA-based hospices remain in separate categories;

- a "clearing" mechanism, that compares Benefit enrollment demand and supply and assigns a total enrollment to the system based on which side of the market acts as a constraint: if demand exceeds supply, enrollment is supply-driven and excess demand is absorbed into non-hospice care: if supply exceeds demand, demand determines enrollment and providers have unfilled slots;

- a utilization component, that computes total hospice enrollee months, and non-hospice months (for hospice and non-hospice beneficiaries), and estimates Hospice Benefit and regular Medicare Part A-reimbursable utilization based on utilization rates in the Hospice Benefit Evaluation beneficiary samples;

- a reimbursement component, that combines dollar reimbursement rates for each Hospice Benefit and regular Part A-reimbursable service with total utilization, to project total Medicare Part A utilization; Part B reimbursement is added at this step, based on estimates of total Part B reimbursements per beneficiary in the last year of life;

- a summary component, that totals reimbursement in various ways (total Part A, total Part B, total Medicare, Medicare reimbursement per capita).

The "non-Benefit" model assumes that all terminally-ill beneficiaries would use the average non-hospice patients' amounts of hospital, skilled nursing, home care and other Part A reimbursable services, and incur the Part B expenditures of the average non-hospice patient.

4.2 Baseline Projection

To provide a framework for evaluating policy options, the model was used to project Medicare reimbursements for terminally-ill Medicare cancer patients from FY85 through FY92, with the following assumptions:

- the number of eligible beneficiaries would grow at the average annual rate projected by the Bureau of the Census for the elderly population (1.9 percent);

- dollar values would increase at the average annual rate of inflation in the medical care component of the consumer price index between 1984 and 1988 (6.2 percent); actual inflation rates were used between FY85 and FY88; hospice per diem rates were set at actual levels from FY85 through FY88, and then allowed to increase at the assumed inflation rate;

- utilization rates of hospice and non-hospice services would remain unchanged throughout the period; the distribution of length of hospice enrollment by hospice type would remain the same, (allowing for an initial response to removal of the 210-day limit) as would the relative proportions of general inpatient care, routine home care, continuous care and respite care; all Part A utilization rates for hospice and non-hospice patients were kept constant.

- hospice "supply" (the number of applicants enrolled and cared for by certified hospices) would increase over this period at the same rate as ''demand" (the number of eligible beneficiaries seeking to be enrolled); because information on supply can be projected from available data (the number of certified hospices, the numbers of enrollees served by certified hospices), total enrollment was projected to grow from FY85 to FY88 at a rate determined by two factors:

- actual growth in the numbers of certified hospices, by hospice type;
- growth in the numbers of Medicare Hospice Benefit enrollees per certified hospice, by hospice type.[1]

After FY88, hospice enrollment was projected forward at the same rate of increase assumed for all terminally-ill Medicare cancer patients (1.9 percent annually).

This baseline forecast generates a small but expanding net cost difference between the "with-hospice" and "without hospice" models, as Table .1 shows. In FY85, total "saving", of $1.86 million, is roughly 0.0019 percent of total Medicare Part A and B expenditure for terminally-ill Medicare beneficiaries, estimated to be about $9.9 billion.[2]

One important change in the Benefit is incorporated into this baseline forecast. In FY86, a flat $10 per diem increase in the four daily Hospice Benefit rates went into effect. It is too soon to evaluate the impact of this change on provider certification rates and behavior. Data on provider profitability reported in Chapter 2 show that many providers earned positive net revenues under the old and the new rates. It is clear that the change rewards providers with relatively more routine home care days than other days; a $10 increase added 18.8 percent to the original routine home care rate, but only 3.7 percent to the general inpatient care rate.[3]

---

[1]Information on Medicare enrollees per hospice was available only for FY85 and FY86. It was assumed that FY86 estimates, by hospice type, remained constant from FY86 through FY92.

[2]"Saving" in this forecast is not comparable to either the actuarial or statistical savings estimates presented in Chapter 3. It reflects differences in total Parts A and B expenditures over the last year of life. Table 3.24 showed that the difference was very small and statistically insignificant, but still suggesting that hospice patients were less expensive than conventional care patients.

[3]Analyses reported in Chapter 3 detected an apparent decrease in the use of inpatient care under the Benefit. However, it would be unwise to attribute the decrease solely to rate incentives. Changes observed in patterns of practice in FY86 are influenced by several factors, including entry of new providers, real practice pattern changes of existing providers, and measurement issues (the truncation of the length of enrollment distribution, discussed in greater detail in Chapter 3). One or two years of data beyond the rate change would provide more information on provider response to the rate increase.

More recently, Congress removed the 210-day limit on Benefit payments, as part of the Medicare Catastrophic Coverage Act. This provision becomes effective in January 1989. How will this change affect provider behavior, and more specifically, lengths of Benefit enrollment?

- No major increase in length of enrollment is clearly one possible outcome. Certified providers and providers contemplating certification still face constraints (the budget ceiling, the 20 percent cap on inpatient days) that encourage caution in enrolling beneficiaries.

- An increase in average stays among current providers might occur, as individuals who formerly died after exceeding the 210-day limit continue to receive Benefit payments.

- Provider might risk enrolling certain patients earlier, believing that longer stays are more appropriate for a hospice intervention.

- Providers might enroll patients with more uncertain prognoses (within the six-month requirement); non-cancer patients might be enrolled in greater numbers under this change.

Removing the 210-day limit increases Benefit and total Medicare payments, and reduces the net saving effect, as Table 4.1 shows. Three alternates were projected. First, it was assumed that the percentage of Beneficiaries who would remain beyond 210 days would equal percentages of National Hospice Study patients with stays of 210 or more days (4 percent for home care based hospices, used in this simulation for the HHA-based and freestanding hospices, and 3 percent for hospital based hospices, used here for hospital/SNF-based hospices). Average length of enrollment for those with 210 or more days was then set at two alternative levels: 300 days and 360 days. As a third option, it was assumed that the average length of stay in all provider types would be the average enrollment of National Hospice Study cancer patients in home care based hospices: 55.2 days. This represents a "maximum" assumptions, grounded on recent research.

Total Hospice Benefit payments under alternative length of enrollment assumptions range from $28.1 to $79.8 million more than the baseline FY92 forecast, as Table 4.1 shows. Total net costs are considerably higher with longer stays. Assuming the average enrollment equals the National Hospice Study figure in FY92, the net cost to Medicare of removing the length of enrollment limit is estimated to be $27.9 million. A more conservative assumption , that a small percentage of current patient census in certified

Table 4.1

MEDICARE EXPENDITURE FORECASTS
BASELINE AND ALTERNATIVE
LENGTH OF ENROLLMENT ASSUMPTIONS

Options	Total Medicare Expenditure	Total Hospice Benefit Payment	Per Capita Benefit Payment			Net Cost[1]
			Freestanding	HHA-Based	Hospital/ SNF-Based	
Baseline (FY85)	$9,949.2 million	$10.58 million	$1,577	$1,904	$2,612	$1.86 million
Target Year (FY92)						
Options[2]						
Low net cost	$17,357.0 million	$85.32 million	$3,614	$4,168	$4,794	($0.44 million)
Medium net cost	$17,360.27 million	$92.46 million	$3,907	$4,479	$5,040	($3.7 million)
High net cost	$17,384.45 million	$136.89 million	$6,147	$5,040	$6,863	($27.9 million)

[1]Net Parts A and B cost without Benefit, minus cost with Benefit; "Savings" (no parentheses); "Cost" (parentheses).
[2]Alternative length of enrollment assumptions, given 210-day limit removed: low net cost (average length of enrollment of 210+ group equals 300 days); medium net cost (average length of enrollment of 210+ group equals 360 days); high net cost (overall average length of enrollment equals National Hospice Study cancer patient average, 55.2 days).

Source: AAI Medicare Hospice Benefit Policy Model.

hospices will have stays over 210 days, averaging 300 days, generates a net cost of about $440 thousand. Total Medicare A and B costs are higher for longer average stays, but the differences are smaller than those among total Benefit payments, because the Benefit substitutes for other Medicare coverage.

In the following discussion, we use a baseline forecast that includes the most conservative assumption regarding how average length of enrollment will respond to removal of the 210 day limit: that is, average lengths of stay in freestanding hospices are expected to increase by 12.3 days by FY89, with comparable increases in HHA-based hospices (12.3 days) and hospital/SNF-based hospices (8.7 days). This is a more reasonable assumption than either of the extremes; no change in average length of enrollment or length of enrollment at the level observed for cancer patients under a cost based reimbursement system, as in the National Hospice Study.

4.3 Rate Modification

In FY86, HCFA implemented a Congressionally mandated rate increase of $10 per diem, for each of the four daily Benefit payment rates. Total Benefit payments more than doubled as a result. In addition, as the baseline forecast of the Hospice Benefit policy model shows, the distribution of payments among hospice type changed, reflecting the unequal proportional effect of this flat dollar increase among types of care. Per capita Benefit payments to patients in home care-intensive freestanding hospices gained 13 percent from FY85 to FY87; HHA-based hospice payments increased by 12 percent. In contrast, hospital/SNF-based providers, which have utilized somewhat more inpatient-intensive care, gained 11 percent. Shares of Benefit payments by hospice type also changed, with freestanding hospices increasing from 34 to 47 percent of the total. Most of this change can be explained by shifts in supply capacity; freestanding hospices served an average of 36 beneficiaries in FY85, increasing to 69 in FY86. Increases among other hospices were well under 25 percent.

No major attempts to modify payment rates have been made since FY85. In fact, rates have remained constant since that time. As the analyses in Chapter 2 demonstrate, based on available knowledge of certified provider costs, any changes designed to cover average costs by type of care would probably lead to maintenance or slight decreases in some current rates. If average FY86 certified hospice provider costs are trended forward at the rate of inflation in the medical care CPI from FY 86 to FY88, the average routine

home care cost exceeds the current average national rate by about $3.37. If the rate is held constant into FY89, the average "loss" per diem grows to about $7.50, assuming cost inflation at 6.2 percent annually and no provider efforts to contain routine home care costs. Certified hospices apparently provide general inpatient care at costs well below current rates. The average rate less cost differential was $42 in FY86; with cost inflation, this differential narrows to $27. The two least-used services, inpatient respite and continuous care, apparently cost the average hospice considerably more than current per diem rates. Inpatient respite care was reimbursed at $65.33 in FY86; reported average per diem costs were $127. Continuous care reimbursement averaged $368.67 for a full day in FY86, but cost certified providers, on average, $519.32 per diem.

A modest 3 to 4 percent increase in the FY88 routine home care rate, with subsequent increases to follow cost inflation trends, would preserve the existing incentives, which favor use of home care. The general inpatient rate requires no change to preserve current levels of inpatient utilization. Any changes in rates for continuous home care and inpatient respite care to bring payments up to estimated costs would probably not radically affect provider practice patterns or total Benefit payments. What might justify modifying the current rate structure beyond changes designed to adjust for cost inflation?

- Critics of the Benefit have argued that certain essential hospice services, like bereavement counseling, are not covered by the existing rates. They argue that these services should be reimbursed directly.

- In order to attract some hospices that have not yet been certified, certain rates might have to be increased. Evidence presented in Chapter 2 suggests that the average non-certified hospice incurred costs for inpatient services higher than certified hospice costs.

- If Congress modifies the Social Security Act to allow more AIDS patients to acquire disability status under Medicare, some rates might have to be increased to cover the higher costs incurred by these individuals.

Hospice Services. In the second annual report of the Medicare Hospice Benefit Program Evaluation, findings on utilization and costs of three specific hospice services were reported: outpatient drugs, dietary and nutritional counseling and bereavement counseling.

Certified hospices reported average costs per patient for outpatient drugs of $147 (FY85) and $216 (FY86). As Table 4.2 shows, the standard

Table 4.2

MEDICARE HOSPICE BENEFIT CERTIFIED PROVIDERS
OUTPATIENT DRUG, DIETARY AND BEREAVEMENT
COUNSELING COST PER PATIENT

Cost Category	FY85 (N=51)	FY86 (N=123)
Outpatient Drug	$147	$216
	(268)	(857)
Dietary and Nutritional Counseling	10	3
	(72.5)	(16.7)
Bereavement Counseling	104	80
	(168)	(282)

Source: AAI/HCFA Hospice Provider Cost Report File.

Note: Standard deviations in parentheses.

deviations for these estimates were considerably larger than the estimates themselves. This represents costs of roughly $9 per home day, considerably higher, even with cost inflation, than HCFA's original estimate that outpatient drug costs would be about $0.95 per home day. Hospices still have the option of collecting a 5 percent copayment from Beneficiaries for outpatient drug costs. There is no evidence that providers have taken the steps required to implement copayment collection. Therefore, it must be assumed that drug costs have not been a financial burden for certified hospices under current payment rates.

Data from the National Hospice Study, other hospice research and provider cost reports from the first three years of the Hospice Benefit confirm that few hospices incur costs for dietary and nutritional counseling and that the average cost per patient is low ($10 in FY85 and $3 in FY86) and highly variable. Since the evidence is consistent in both cost based and prospective reimbursement payments systems, there is no reason to believe that payments targeted at this service would increase equity among providers or increase the use of these services.

Similar conclusions apply to bereavement counseling; the service is not provided to all families, not all hospices record bereavement costs, and the average per patient costs of bereavement counseling have remained reasonably stable at around $80 over the first three years of the Benefit.

For each of these services, it is impossible to determine how much certified hospices spend only on Medicare Hospice Beneficiaries. Total costs of the three combined are well under five percent of total provider costs, a finding that holds true both for certified and non-certified hospices.

The General Inpatient Care Rate. Although well above reported average costs for general inpatient care among currently certified hospices, the general inpatient per diem of $281 falls short of the average for the comparison group of non-certified hospices used in Chapter 2 analyses. If the government wanted to encourage more rapid growth in the number of certified hospices, an increase in this rate might be one useful tool for this purpose. The current routine home care per diem, with or without an adjustment for past cost inflation, exceeds costs among the non-certified hospices by about $20. Therefore, an increase in the inpatient rate probably would not need to cover fully the $500 non-certified average per diem cost to promote an increased rate of growth.

A dramatic change in patient mix would be a powerful argument favoring a rate modification. Enrollment of AIDS patients under the Benefit could provide this justification. The cost differential between AIDS patients and the terminally-ill Medicare beneficiaries in this study cannot be determined accurately. Current estimates of the costs of treating AIDS are based on limited patient samples, and tend not to include ambulatory services. Estimates range from $70,000 over a 13 month period (Scitovsky and Rice) to $94,000 over a 12 month period (Pascal). If the terminal year hospital costs of an AIDS patient in FY86 were $60,000 to $70,000, then AIDS inpatient costs are 4 to 5 times higher than inpatient costs for hospice and non-hospice patients in the Hospice Benefit sample. This translates into an average per diem cost of $800 to $1000. Admitting AIDS patients to certified hospices would probably not raise inpatient costs this much, assuming providers would still serve mostly traditional Medicare clients. In addition, the estimates of per diem AIDS costs used here assume the same frequency and amount of inpatient utilization in AIDS and other terminally-ill patients. This is probably not true, although evidence on this will only become available as prospective studies of health care utilization among AIDS patients are completed.

A hypothetical increase to $500 in the general inpatient per diem, to encourage certification or to cover a more costly patient mix, has a dramatic effect on total Benefit payments and on the net costs of the Benefit. Total Benefit expenditure in FY92 would be $109.77 million with the higher rate, compared to $85.32 million in the baseline forecast. Net costs to Medicare would be $24.89 million, compared to a baseline cost of $440 thousand. The rate of increase in Benefit expenditure per case is affected as well. Because hospital/SNF-based providers claim more general inpatient care reimbursement than freestanding or HHA-based providers, expenditure per case in hospital/SNF-based hospices would be 51 percent higher than freestanding in FY92 with the payment rate increase, and 30 percent higher than HHA-based; this compares to differentials of 33 percent and 15 percent respectively, without the payment rate increase.

Of course, if a rate change does encourage certification, many other basic parameters in the system could change as well, including patient mix, regional balance and practice patterns. The relative proportions of inpatient and home care services provided could change, among currently certified providers, in response to incentives created by the higher rate. Effects of altered practice patterns are projected later in this section.

Rate modifications can have important effects on total Benefit payments and on the distribution of payments among hospice types. In the example shown here, however, the net cost to Medicare of about $25 million in FY92 is still a small percentage of total Medicare Part A and B expenditure for terminally-ill cancer patients, roughly 0.14 percent of $17.4 billion.

4.4 Access Enhancement

Several parts of the Hospice Benefit system have been criticized for limiting access to Medicare-reimbursed hospice care. Suggestions have been made to revise the system.

- Eliminate the reimbursement cap, set in the initial regulations at $6500 and adjusted annually to the inflation rate. The cap was designed to constrain each provider's total budget, not to restrict payments for individual cases. The cap level, set at $7,391 in FY86, was increased to $8,403 in FY88.

- Provide reimbursement for the services normally provided by primary care persons, for patients who live alone or lack adequate informal support at home. Some have argued that payment for PCP services, to a currently employed family member or to someone with credentials to provide personal care services at home, would encourage more patients and families to enroll in a certified hospice program.

- Modify the requirement that a physician certify a prognosis of six months or less ; some argue that if physicians had more flexibility in this regard, many would be more receptive to hospice referral.

- Remove or modify the core services requirement. Rural hospices may now apply for a waiver of the skilled nursing requirements (only one has so far), but findings of the Joint Commission on Accreditation of Healthcare Organizations study indicate that many non-certified hospices are deficient on some or all of the core services requirements.

- Remove the limit on total inpatient days. Few certified providers now exceed the 20 percent limit on the share of general inpatient and inpatient respite days. However, incentives for providers to screen patients in order to reduce risk (of losing certification status as well as of facing claims denials) would be eliminated by this change.

By removing the 210-day limit on Benefit payments, Congress acted on one of the access issues of most concern to the hospice industry. None of the other options has generated the same level of concern. However, policy makers could

return to these issues in the future, responding to general pressures on health care resources from the expanding burden of AIDS cases and growing needs of the aging population.

Policies to enhance access might promote responses on both the demand and supply sides of the market.

Demand side changes include an increase in the proportion of potentially eligible beneficiaries who choose the Hospice Benefit program. As numbers grow, the patient mix of Hospice Beneficiaries should change. If it is assumed that beneficiaries who chose hospice in the early years of the program were those most disposed to the home-oriented model of care, then deeper market penetration by certified hospices should attract patients with relatively greater inpatient care needs. Two demand-related options are developed through the policy model: an increase in inpatient utilization within the Benefit, and an overall increase in the share of terminally-ill Medicare beneficiaries with cancer who elect hospice care. In addition, the implications of paying for primary care person services are discussed.

Provider responses would depend on how regulations are modified. If the inpatient day limit were removed, providers might not respond with more inpatient claims if they believed that other constraints would be jeopardized (the budget cap) or other goals of hospice care (family involvement, stress on home placement) would be compromised. The policy model is used to project expenditures based on very simple assumptions regarding increases in inpatient utilization.

Changes in core services requirements could encourage provider entry, leading to growth in the certified provider share of the industry and, potentially, to a change in the structure of the certified group by hospice type. It was noted in Chapter 2 that the proportion of freestanding hospices is larger among certified providers than among all hospice providers in the United States. If policy changes encourage more hospital-based providers to apply for certification, the level and composition (among hospice types) of Benefit payments should be affected. Three scenarios are modeled, representing varying proportions of the three hospice types.

Somewhat less than one percent of the total number of Medicare cancer patients who died in FY85 died as certified Hospice Beneficiaries. The Hospice Benefit model projects a baseline increase in share to roughly 3 percent by FY89, a rate that remains constant through FY92.

An increase in the proportion of eligible beneficiaries who choose hospice will increase Benefit payments proportionately, and net costs will increase more than proportionately, as Table 4.3 shows. Benefit payments increase from $85.32 million in FY85 t o $127.99 million (for a 50 percent increase in the predicted share) or to $170.65 million, for a doubling of the share. Net costs increase from $210 thousand to $790 thousand for the first option, or to $1.14 million for the second. These projections do not assume any change in patient mix or provider practice; added Beneficiaries are assumed to enroll across hospice types in the same proportions over the whole time period and utilize the same mix of Benefit and regular Part A inpatient and home care services. It is also assumed that provider capacity will adjust to accommodate increased demand. At current "baseline" supply projections, this would not be possible. This projection implies that a net unsatisfied demand of 15 to 20 thousand beneficiaries would have to seek alternative care options in FY92 if projected share changes were not matched by increased capacity.

Change in patient mix toward beneficiaries with relatively greater needs for inpatient care could increase the net cost of the Hospice Benefit option. Table 4.3 shows the implications of a simple assumption, that the share of general inpatient care in total Benefit days rises to the 20 percent cap in all three hospice types. Keeping all other assumptions the same, this means that the net cost of the Hospice Benefit option to Medicare in FY92 would be $15.56 million, compared to $440 thousand in the baseline projection.

Medicare reimbursement for primary care persons, under certain conditions, might have an effect similar to the patient mix change discussed above. The National Hospice Study showed that hospice patients who lived alone incurred higher total costs in hospice than patients who lived with family or friends. Isolated individuals were more likely to need inpatient services. However, if higher costs were determined entirely by the lack of adequate home supports, enrolling these individuals might not raise Benefit costs by more than the expenditure to compensate PCP time. Moreover, if currently enrolled Hospice Beneficiaries who live alone could increase time at home if a paid primary care person were available, Medicare might realize a net saving.

However, past research suggests that informal care may partially substitute for formal care, but that proportions of both formal and informal care remain reasonably constant throughout the hospice enrollment period. The

MEDICARE EXPENDITURE FORECASTS
BASELINE AND ALTERNATIVE
ASSUMPTIONS ABOUT ACCESS-ENHANCING POLICIES

Options	Total Medicare Expenditure	Total Hospice Benefit Payment	Per Capita Benefit Payment			Net Cost[1]
			Freestanding	HHA-Based	Hospital/ SNF-Based	
Baseline[2]						
FY85	$9,949.2 million	$10.58 million	$1,577	$1,904	$2,612	$1.86 million
FY92	$17,357.0 million	$85.32 million	$3,614	$4,168	$4,794	($0.44 million)
Options (FY92)						
Hospice Benefit Patient Share						
--50 percent increase	$17,357.32 million	$127.99 million	$3,614	$4,168	$4,794	($0.79) million
--100 percent increase	$17,357.70 million	$170.65 million	$3,614	$4,168	$4,794	($1.14) million
Inpatient days as percent of total Benefit days						
--20 percent	$17,372.12 million	$100.44 million	$4,432	$4,797	$5,252	($15.56) million
--30 percent	$17,392.44 million	$120.76 million	$5,326	$5,770	$6,319	($35.88) million
--50 percent	$17,433.08 million	$161.40 million	$7,115	$7,716	$8,453	($76.52) million
--80 percent	$17,494.05 million	$222.37 million	$9,799	$10,635	$11,653	($137.49) million
Changes in composition of certified provider group[3]						
--Low net cost option	$17,356.75 million	$82.85 million	$3,614	$4,168	$4,794	($0.19) million
--Medium net cost option	$17,357.16 million	$89.75 million	$3,614	$4,168	$4,794	($0.60) million
--High net cost option	$17,357.72 million	$94.41 million	$3,614	$4,168	$4,794	($1.16) million

[1] Net Parts A and B cost without Benefit, minus cost with Benefit; "Savings" (no parentheses); "Cost" (parentheses).
[2] Baseline FY92 forecast assumes average length of enrollment of Beneficiaries with 210+ days equals 300 days.
[3] Forecasted FY92 numbers of providers, by type: low net cost option (freestanding and hospital/SNF-based numbers interchanged); medium net cost option (hospital/SNF-based and HHA-based numbers interchanged); high net cost option (freestanding and HHA-based numbers interchanged).

Source: AAI Medicare Hospice Benefit Policy Model.

chances of major savings in inpatient care are remote. Therefore, an estimate of the cost of reimbursing primary care persons has been made without an assumption of offsetting cost reductions in formal care.

The National Hospice Study estimated that the primary care persons' lost incomes (from part-time and full-time employment) averaged from $500 to $2400. For this projection, a value of $1000 is used. Hospice lengths of enrollment are currently about one-half the stays incurred by NHS patients; therefore, it is assumed that the average PCP would lose $500 by deciding to quit work to care for a Hospice Beneficiary. If Medicare decided to compensate for lost income (rather than pay a flat rate equivalent to the local market value of a personal care attendant), the expected value per beneficiary would depend both on the accuracy of this assumption, and on the relative need for informal support. In the NHS, roughly 20 percent of hospital-based patients lived alone; in home care-based hospices, the figure was 15 percent. If the share of "living alone" patients were assumed to be the same (using the home care-based hospice assumption for freestanding and HHA-based certified hospice patients, and the hospital -based assumptions for hospital/SNF-based patients), the expected value per beneficiary of PCP payment would be $75 in the former (15 percent times $500), and $100 in the latter (20 percent times $500). These estimates were inflated forward at the appropriate rates, and used to project total dollar effects on FY92 reimbursements.

Holding everything else constant, payment for PCP services would add about $1.8 million to the baseline FY92 Benefit. This is equivalent to roughly $2.58 per capita for all terminally-ill Medicare cancer patients. The effect on net costs of the hospice model would be an increase, from $440 thousand to about $2.0 million.

Provider Response

Increased utilization of general inpatient care within the Benefit has already been shown to increase the net costs of hospice. Removing the 20 percent cap altogether will generate proportionally greater net costs, unless providers restrain the use of these expensive services. Mainstream thinking on the appropriate model of hospice care in the United States has always stressed home placement. As noted in Chapter 2, an alternative model exists in Hospice, Inc. of Connecticut, where over half of all enrolled days are in inpatient settings. Table 4.3 shows the implications of moving toward higher average amounts of inpatient utilization.

Net costs at the 20 percent cap, in FY92, were previously estimated to be $15.56 million. If the average share of general inpatient care days in all hospices increased to 80 percent, net costs would grow to $137.49 million. Total Benefit payments would more than double, from $100.44 million at the current 20 percent cap to $222.37 million at the extreme 80 percent inpatient assumption.

Changes in reimbursements and practice patterns can also occur if the "marginal" applicant for certification is different from currently certified providers. Any changes in incentives that encourage more hospital-based providers to seek certification could gradually move the distribution more toward the U.S. population distribution of hospices, which has had a larger share of hospital-based providers. Table 4.3 shows the implications of different assumptions regarding the distributions of hospices, by type. The three options shown were created by reversing total numbers of forecasted providers between hospice type pairs. Thus, for example, option 1 shows the implications of having 163 freestanding and 184 hospital/SNF based providers, instead of 184 freestanding and 163 hospital/SNF based. This represents a "conservative" increase in the hospital/SNF based share, for the same total number of providers. Option 2 reverses the freestanding and HHA-based numbers, resulting in a relative increase in the freestanding share. Option 3, reversing hospital/SNF-based and HHA-based numbers, leads to the largest hospital/SNF-based share.

Option 2 generates the largest net cost, at $1.16 million in FY92, compared to the baseline estimate of $440 thousand. This large increase in the numbers of freestanding hospices, with their relatively high predicted capacity (69 beneficiaries on average , compared to less than 40 in the other two hospice types) causes the largest increase in total Beneficiaries served. Option 1, which produces a lower net cost ($190 thousand) than the baseline prediction, reduces the total number of high-capacity freestanding hospices.

4.5 Changes in Non-Hospice Utilization and Reimbursement

So far, predictions of net costs and total Medicare reimbursements have been based on assumptions about changes in the Hospice Benefit system. However, the relative cost advantage or disadvantage of the Benefit depends critically on the relative costliness of treating terminally ill patients in non-hospice settings. Even with the extreme assumption that the Benefit share

doubles over the baseline FY92 prediction, this share will still be roughly 6 percent of total eligibles. Changes in hospital admissions policies, revisions to the DRG payments systems, reform of Medicare home health payment policies and cost containment efforts directed at Part B payments are likely to continue to be more important determinants of the relative cost advantage of the Hospice Benefit for years to come.

This fact is illustrated in a series of forecasts using the Hospice Model, incorporating variations in the following:

- the number of hospital admissions per non-hospice month;
- the number of Medicare-reimbursed home health visits per non-hospice month;
- the average Medicare Part A reimbursement rate per inpatient admission;
- the average Medicare Part B payment per non-hospice beneficiary.

Part A Utilization and Reimbursement. Current Medicare reimbursement policy has encouraged hospitals to contain inpatient costs, in order to earn net revenues on fixed case-based payment rates. The initial effect of the new hospital rate structure appears to have been as expected, with lower Medicare lengths of inpatient stays, somewhat fewer admissions, and increased use of post hospital care, particularly Medicare-reimbursed home health care.

A decline in regular Part A admissions rates can dramatically increase the net costs of hospice, as Table 4.4 shows. Assumed baseline regular Part A admissions per month rates, from Evaluation project data, were 0.23 for non-hospice and 0.205 for hospice patients (an average that includes utilization before and during hospice enrollment). Lowering non-hospice enrollment rates to 0.22 per month increases FY92 net costs from $440 thousand to $19.06 million. If non-hospice and hospice admission rates are equalized at 0.205, net costs would grow to $46.98 million. Total Medicare payments decline, from over $17 billion in the FY92 baseline projection to roughly $16 billion at the point of equality between admissions rates. Total Benefit payments stay the same, as do Benefit payments per capita. The Hospice Benefit loses its cost advantage in a dramatic fashion, as its advantage in saved Part A admissions disappears.

The implications of increased use of non-hospice home health services are depicted in Table 4.4. The baseline estimate of 1.021 visits per

Table 4.4

MEDICARE EXPENDITURE FORECASTS
BASELINE AND ALTERNATIVE
NON-HOSPICE UTILIZATION ASSUMPTIONS

Options	Total Medicare Expenditure	Total Hospice Benefit Payment	Per Capita Benefit Payment			Net Cost[1]
			Freestanding	HHA-Based	Hospital/ SNF-Based	
Baseline[2]						
FY85	$9,949.2 million	$10.58 million	$1,577	$1,904	$2,612	$1.86 million
FY92	$17,357.0 million	$85.32 million	$3,614	$4,168	$4,794	($0.44 million)
Options (FY92)						
Hospital admission rates[3]						
--Low net cost option	$16,822.61 million	$85.32 million	$3,614	$4,168	$4,794	($19.06) million
--Medium net cost option	$16,288.21 million	$85.32 million	$3,614	$4,168	$4,794	($37.67) million
--High net cost option	$16,021.01 million	$85.32 million	$3,614	$4,168	$4,794	($46.98) million
HHA visit rates[4]						
--Low net saving option	$17,618.61 million	$85.32 million	$3,614	$4,168	$4,794	$0.42 million
--High net saving option	$17,886.65 million	$85.32 million	$3,614	$4,168	$4,794	$1.11 million
Part A hospital reimbursement rate[5]						
--Low net cost option	$16,923.57 million	$85.32 million	$3,614	$4,168	$4,794	($3.18) million
--High net cost option	$13,044.28 million	$85.32 million	$3,614	$4,168	$4,794	($27.63) million
Part B reimbursement rate[6]						
--Low net cost option	$17,379.43 million	$85.32 million	$3,614	$4,168	$4,794	$0.27 million
--High net cost option	$16,709.16 million	$85.32 million	$3,614	$4,168	$4,794	($21.05) million

[1] Net Parts A and B cost without Benefit, minus cost with Benefit; "Savings" (no parentheses); "Cost" (parentheses).
[2] Baseline FY92 forecast assumes average length of enrollment of Beneficiaries with 210+ days equals 300 days.
[3] Hospital admissions per month: low net cost option (0.22); medium net cost option (0.21); high net cost option (0.205).
[4] HHA visits per month: low net saving option (1.5); high net saving option (2.0).
[5] Average Part A reimbursement per hospital admission: low net cost option (equals rate for HHA-based patients - $6,389); high net cost option (equals rate for freestanding patients - $4,358).
[6] Average Part B reimbursement per beneficiary, last year of life: low net cost option (equals rate for freestanding patients - $5,733; high net cost option (equals rate for hospital/SNF-based patients - $4,740).

Source: AAI Medicare Hospice Benefit Policy Model.

nonhospice month is increased to 1.50 and 2.00. The resulting increase in regular Part A costs for non-hospice patients increases the hospice cost advantage, producing net savings of $420 thousand and $1.11 million respectively in FY92.

Lower non-hospice reimbursement rates also reduce the hospice net cost advantage. Table 4.4 compares baseline projections with projections in which the reimbursement rates for non-hospice patients (per admission, for Part A inpatient services, and per beneficiary, for Part B) are replaced with averages for Hospice Beneficiary patients. HHA-based hospice patients' Part A reimbursements averaged $6,389 in FY92 dollars, compared to $6,616 for nonhospice patients. Freestanding hospice reimbursement rates , in contrast, were $4,358. When non-hospice rates were changed to the freestanding average, projected net costs of hospice totaled $27.63 million. Using the HHA-based rate produced a much smaller net cost, at $3.18 million.

Freestanding hospice patients' Part B payments averaged $34 higher than non-hospice. In contrast, hospital/SNF-based hospice patients incurred Part B payments $959 less than non-hospice patients. Estimated net costs, when these alternatives were substituted for the non-hospice rate, ranged from a small net saving of $270 thousand to a net cost of $21.05 million in FY92.

In general, estimates of the net cost of the hospice alternative are quite sensitive to moderate changes in assumptions about utilization and costs of non-hospice care. Changes in the relative utilization of Part A hospital and home care services over the next several years will inevitably alter the balance. These experiments suggest that, under reasonable assumptions about continuing decline in hospital use, the relative cost advantage of hospice care will suffer.

4.6 Conclusion

During the first three years, the Medicare Hospice Benefit grew rapidly in numbers of providers seeking certification and in numbers of beneficiaries served. This Evaluation found no evidence that the Benefit was a major source of escalating cost to the Medicare program during the period we studied. Actual expenditure effects were probably nil. Evidence on the Benefit as a source of actual and potential saving is inconclusive.

Providers seemed able to operate well within limits, set by the government, that were designed to control costs, and there is limited evidence

that providers even gained from the program, much as the average hospital appeared to gain during the first year of the Medicare Prospective Payment System.

We have discussed the adequacy of Benefit payment rates in terms of conditions that existed during the Evaluation period and, in this chapter, in terms of present and future needs. We see no particular reason to revise rate structures dramatically, either by changing what Medicare pays for (bereavement counseling, for example) or by changing rate levels. However, it is likely that incentives for providers to become certified will be curtailed if rates continue to be frozen. At current rates of inflation, many of the providers that appeared to be doing well financially under the Benefit may be losing in FY88. Moreover, it is not clear how much rate stringency would promote cost containment efforts in hospice care. We know almost nothing about the relationship between costs and the quality of hospice services, and in fact the cost basis for rate setting, based on provider cost reports, remains very weak.

Increased use of routine home care has clearly played a part in stabilizing Hospice Benefit expenditures. This represents a desirable trend in one sense. However, it raises questions about whether or not patients who would benefit from less home-intensive care are being denied access to Medicare Hospice Benefit services. As with the Medicare PPS program, it would probably be well to give some more consideration to quality and access issues in an industry that, for those providers that chose certification, seems to have adapted to the financial constraints quite readily.

APPENDIX A

MULTIVARIATE REGRESSIONS USED IN THE ANALYSES

TABLE 2.17

DEP VARIABLE: RTOT_CR RATIO: TOTAL CHARGES/REIM

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	18	0.037772	0.002098422	2.122	0.0297
ERROR	33	0.032637	0.0009890143		
C TOTAL	51	0.070409			

ROOT MSE	0.031449	R-SQUARE	0.5365
DEP MEAN	1.022900	ADJ R-SQ	0.2836
C.V.	3.074453		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	0.958968	0.046760	20.508	0.0001	INTERCEPT
DFREE	1	-0.000388308	0.036097	-0.011	0.9915	DUMMY: HTPYE1=FREE
DHHA	1	0.025573	0.036008	0.710	0.4826	DUMMY: HTYPE1=HHA
DHOSP	1	0.052791	0.042375	1.246	0.2216	DUMMY: HTYPE1=HOSP
D86	1	0.005950081	0.040658	0.146	0.8845	DUMMY: YEAR=FY86
DFREE86	1	0.002108122	0.043591	0.048	0.9617	DUMMY: DFREE*D86
DHHA86	1	-0.000924428	0.042803	-0.022	0.9829	DUMMY: DHHA*D86
DHOSP86	1	0.043600	0.051171	0.852	0.4003	DUMMY: DHOSP*D86
RINP_LOS	1	0.059402	0.079455	0.748	0.4600	RATIO: INP+RES UNITS/HTOTLOS
RCNT_LOS	1	0.003433649	0.012364	0.278	0.7830	RATIO: CNT UNITS/HTOTLOS
DREG1	1	0.034948	0.037038	0.944	0.3522	DUMMY: REGION=1
DREG2	1	0.036057	0.029954	1.204	0.2372	DUMMY: REGION=2
DREG3	1	-0.015132	0.034730	-0.436	0.6659	DUMMY: REGION=3
DREG4	1	0.049960	0.030237	1.652	0.1080	DUMMY: REGION=4
DREG5	1	0.021230	0.028145	0.754	0.4560	DUMMY: REGION=5
DREG6	1	0.083511	0.031002	2.694	0.0110	DUMMY: REGION=6
DREG7	1	0.036959	0.044023	0.840	0.4072	DUMMY: REGION=7
DREG8	1	0.045495	0.030131	1.510	0.1406	DUMMY: REGION=8
DREG9	1	0.023202	0.028780	0.806	0.4259	DUMMY: REGION=9

TEST: TEST1	NUMERATOR:	.0016942	DF: 1	F VALUE:	1.7131
	DENOMINATOR:	9.9E-04	DF: 33	PROB >F :	0.1996
TEST: TEST2	NUMERATOR:	.0031064	DF: 1	F VALUE:	3.1409
	DENOMINATOR:	9.9E-04	DF: 33	PROB >F :	0.0856
TEST: TEST3	NUMERATOR:	2.1E-05	DF: 1	F VALUE:	0.0209
	DENOMINATOR:	9.9E-04	DF: 33	PROB >F :	0.8859
TEST: TEST4	NUMERATOR:	.0015869	DF: 1	F VALUE:	1.6045
	DENOMINATOR:	9.9E-04	DF: 33	PROB >F :	0.2141
TEST: TEST5	NUMERATOR:	.0019178	DF: 1	F VALUE:	1.9391
	DENOMINATOR:	9.9E-04	DF: 33	PROB >F :	0.1731

TABLE 3.6

DEP VARIABLE: HATOT_RT

SOURCE	OF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	37	70085150261	1894193250	598.890	0.0001
ERROR	15056	47619703597	3162839		
C TOTAL	15093	117704853858			

ROOT MSE	1778.437	R-SQUARE	0.5954
OEP MEAN	2305.771	ADJ R-SQ	0.5944
C.V.	77.12984		

VARIABLE	OF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=O	PROB > |T|	VARIABLE LABEL
INTERCEP	1	1338.511	676.017	1.980	0.0477	INTERCEPT
HHA	1	-786.243	139.003	-5.656	0.0001	
HOSP	1	-672.395	139.660	-4.815	0.0001	
FREE	1	-988.952	135.461	-7.301	0.0001	
IN85	1	-69.220926	173.125	-0.400	0.6893	
HHAIN85	1	-39.557254	183.010	-0.216	0.8289	
HOSPIN85	1	-15.796111	185.395	-0.085	0.9321	
FREEIN85	1	-33.082193	179.881	-0.184	0.8541	
REGION1	1	308.793	135.161	2.285	0.0223	N. ENGLANO
REGION2	1	447.017	90.170441	4.957	0.0001	NY,NJ,PR
REGION3	1	601.599	100.538	5.984	0.0001	MID ATLANTIC
REGION4	1	259.399	88.931215	2.917	0.0035	S. ATLANTIC
REGION5	1	366.249	91.927199	3.984	0.0001	E.N. CENTRAL
REGION6	1	45.061900	96.255877	0.468	0.6397	S. CENTRAL
REGION7	1	645.005	106.973	6.030	0.0001	W.N. CENTRAL
REGION8	1	-69.322118	114.155	-0.607	0.5437	MOUNTAIN
REGION9	1	-33.637670	96.412739	-0.349	0.7272	S. PACIFIC
AGE	1	-13.955241	17.643351	-0.791	0.4290	
AGE_SQ	1	0.075390	0.119259	0.632	0.5273	
HTOTLOS	1	76.156818	1.517495	50.186	0.0001	LENGTH OF TOTAL HSPC BENEFIT
HTLOS_SQ	1	-0.029278	0.012844	-2.279	0.0227	
HLOS5	1	-191.108	47.409591	-4.031	0.0001	
HLOS180	1	-481.140	367.365	-1.310	0.1903	
SEX	1	39.525699	30.481036	1.297	0.1947	
BLACK	1	250.512	98.037535	2.555	0.0106	
WHITE	1	189.766	81.094235	2.340	0.0193	
COLON	1	-161.952	42.330996	-3.826	0.0001	
LUNG	1	-128.692	43.227533	-2.977	0.0029	
BREAST	1	-30.557969	70.425862	-0.434	0.6644	
REPRO	1	-193.707	56.090332	-3.453	0.0006	
URINARY	1	51.587224	80.598266	0.640	0.5221	
LEUK	1	75.045395	140.239	0.535	0.5926	
NON	1	-198.007	64.632595	-3.064	0.0022	
AADM_UB	1	45.962299	6.411805	7.168	0.0001	PARTA - ADMISSIONS - UNITS - BEFORE

TABLE 3.10

DEP VARIABLE: HTOTLOS LENGTH OF TOTAL HSPC BENEFIT

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	119	1377910	11579.078	8.146	0.0001
ERROR	10695	15202946	1421.500		
C TOTAL	10814	16580856			

ROOT MSE	37.702789	R-SQUARE	0.0831
DEP MEAN	34.835229	ADJ R-SQ	0.0729
C.V.	108.2318		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
INTERCEP	1	39.388769	14.267701	2.761	0.0058	INTERCEPT
CTOT_C9	1	0.0000715307	.00006570595	1.089	0.2763	PTA-TOTAL - CHARGES - 1ST HALF YR 2
CTOTOC9	1	5.563791	0.963191	5.776	0.0001	
FEMALE	1	3.675650	0.769233	4.778	0.0001	
WHITE	1	1.951463	1.302932	1.498	0.1342	
EVERQUIT	1	37.649745	4.214756	8.933	0.0001	QUIT ON ANY HSPC CLAIM
ENDQUIT	1	-30.569917	4.461346	-6.852	0.0001	QUIT ON LAST HSPC CLAIM
SWITCHER	1	37.303689	8.012786	4.656	0.0001	TIMES SWITCHED PROVIDERS
AGECAT1	1	-0.039011	0.134919	-0.289	0.7725	AGE (<65)
AGECAT2	1	-0.099779	0.110715	-0.901	0.3675	AGE (65-74)
AGECAT3	1	-0.074754	0.097984	-0.763	0.4455	AGE (75-84)
AGECAT4	1	-0.049288	0.087937	-0.560	0.5752	AGE (>84)
NOCANCER	1	1.491011	1.588505	0.939	0.3479	
COLON	1	-1.205311	1.088923	-1.107	0.2684	
LUNG	1	-1.013759	1.105397	-0.917	0.3591	
BREAST	1	2.997447	1.767645	1.696	0.0900	
REPRO	1	2.908919	1.427070	2.038	0.0415	
URINARY	1	-4.276112	2.177378	-1.964	0.0496	
LEUKEMIA	1	-3.665329	3.979703	-0.921	0.3571	
ENR85	1	4.703820	1.378379	3.413	0.0006	
ENR86	1	0.643372	1.328315	0.484	0.6281	
LATENRLL	1	-16.274167	1.008353	-16.139	0.0001	
PROV2	1	-11.229782	12.888631	-0.871	0.3836	
PROV3	1	-4.562334	13.248679	-0.344	0.7306	
PROV4	1	-10.368019	13.044373	-0.795	0.4267	
PROV5	1	8.936561	15.626199	0.572	0.5674	
PROV6	1	-0.929364	12.213599	-0.076	0.9393	
PROV7	1	-2.643099	13.340212	-0.198	0.8429	
PROV8	1	7.079820	14.625811	0.484	0.6284	
PROV9	1	1.650075	12.418775	0.133	0.8943	
PROV10	1	-3.586514	12.183549	-0.294	0.7685	
PROV11	1	5.302928	12.099281	0.438	0.6612	
PROV12	1	0.994452	12.491751	0.080	0.9365	
PROV13	1	-7.276740	12.006923	-0.606	0.5445	
PROV14	1	-6.418205	11.999464	-0.535	0.5927	

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
PROV19	1	-3.391356	12.357919	-0.274	0.7838	
PROV20	1	6.279573	12.504462	0.502	0.6155	
PROV21	1	8.902500	12.264846	0.726	0.4679	
PROV22	1	-24.902944	29.214959	-0.852	0.3940	
PROV23	1	-2.146711	12.649838	-0.170	0.8652	
PROV24	1	1.549127	12.352060	0.125	0.9002	
PROV25	1	-6.505520	12.460584	-0.522	0.6016	
PROV26	1	-5.661135	12.463890	-0.454	0.6497	
PROV27	1	-3.315533	12.744887	-0.260	0.7948	
PROV28	1	-8.862234	29.230884	-0.303	0.7618	
PROV29	1	-0.549986	19.491552	-0.028	0.9775	
PROV30	1	4.420265	15.636345	0.283	0.7774	
PROV31	1	0.296402	12.451722	0.024	0.9810	
PROV32	1	-1.600825	13.321660	-0.120	0.9044	
PROV33	1	-10.340679	14.623710	-0.707	0.4795	
PROV34	1	-7.896828	39.570162	-0.200	0.8418	
PROV35	1	-9.612029	15.236687	-0.631	0.5282	
PROV36	1	2.795983	18.621581	0.150	0.8807	
PROV37	1	-6.879461	24.857403	-0.277	0.7820	
PROV38	1	-2.003472	12.455668	-0.161	0.8722	
PROV39	1	-8.897798	12.879848	-0.691	0.4897	
PROV40	1	9.441544	14.619931	0.646	0.5184	
PROV41	1	-9.636488	24.841168	-0.388	0.6981	
PROV42	1	-1.123699	12.225321	-0.092	0.9268	
PROV43	1	-4.937137	13.173506	-0.375	0.7078	
PROV44	1	-3.843415	12.139268	-0.317	0.7515	
PROV45	1	8.678926	29.240490	0.297	0.7666	
PROV46	1	44.687976	39.561784	1.130	0.2587	
PROV47	1	-1.244721	15.220968	-0.082	0.9348	
PROV48	1	-6.593294	20.683180	-0.319	0.7499	
PROV49	1	-4.203632	22.353999	-0.188	0.8508	
PROV50	1	4.735563	12.699567	0.373	0.7092	
PROV51	1	-13.483810	14.300478	-0.943	0.3458	
PROV52	1	-2.414985	12.723142	-0.190	0.8495	
PROV53	1	-1.355050	13.725322	-0.099	0.9214	
PROV54	1	-9.640437	12.908317	-0.747	0.4552	
PROV55	1	-7.101106	19.495471	-0.364	0.7157	
PROV56	1	7.810745	16.175830	0.483	0.6292	
PROV57	1	-5.096942	12.802863	-0.398	0.6906	
PROV58	1	-2.818101	12.926564	-0.218	0.8274	
PROV59	1	5.078653	39.574483	0.128	0.8979	
PROV60	1	2.496120	12.934914	0.193	0.8470	
PROV61	1	-4.270889	13.108506	-0.326	0.7446	
PROV62	1	-8.458723	12.454155	-0.679	0.4970	
PROV63	1	-8.615260	12.105959	-0.712	0.4767	
PROV64	1	4.334920	12.271968	0.353	0.7239	
PROV65	1	-4.359844	12.314646	-0.354	0.7233	
PROV66	1	6.508513	12.559101	0.518	0.6043	
PROV67	1	12.357645	39.585815	0.312	0.7549	
PROV68	1	5.106194	12.224576	0.418	0.6762	

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
PROV73	1	-1.644988	15.648605	-0.105	0.9163	
PROV74	1	6.454032	12.520161	0.515	0.6062	
PROV75	1	-0.352871	14.625632	-0.024	0.9808	
PROV76	1	3.009664	14.120576	0.213	0.8312	
PROV77	1	1.354654	15.414813	0.088	0.9300	
PROV78	1	1.684030	12.857793	0.131	0.8958	
PROV79	1	-2.464224	12.194292	-0.202	0.8399	
PROV80	1	-2.776342	13.378872	-0.208	0.8356	
PROV81	1	18.844644	19.485932	0.967	0.3335	
PROV82	1	-4.276275	16.493698	-0.259	0.7954	
PROV83	1	-23.066786	24.860537	-0.928	0.3535	
PROV84	1	-10.577485	12.617926	-0.838	0.4019	
PROV85	1	6.690822	14.498129	0.461	0.6445	
PROV86	1	15.687349	12.275932	1.278	0.2013	
PROV87	1	7.994007	15.042708	0.531	0.5951	
PROV88	1	-1.188728	22.335297	-0.053	0.9576	
PROV89	1	-8.730163	12.039881	-0.725	0.4684	
PROV90	1	-7.076508	13.254599	-0.534	0.5934	
PROV91	1	-13.160232	12.438667	-1.058	0.2901	
PROV92	1	7.322029	15.043723	0.487	0.6265	
PROV93	1	-11.043840	15.642864	-0.706	0.4802	
PROV94	1	-15.557830	14.741500	-1.055	0.2913	
PROV95	1	-4.187201	12.758814	-0.328	0.7428	
PROV96	1	2.419927	15.047365	0.161	0.8722	
PROV97	1	-1.620422	15.212584	-0.107	0.9152	
PROV98	1	-5.212042	12.230304	-0.426	0.6700	
PROV99	1	2.365129	12.821793	0.184	0.8537	

DEP VARIABLE: HTOTLOS LENGTH OF TOTAL HSPC BENEFIT

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	74	571406	7721.700	5.471	0.0001
ERROR	3541	4997653	1411.368		
C TOTAL	3615	5569059			

ROOT MSE	37.568173	R-SQUARE	0.1026
DEP MEAN	35.109513	ADJ R-SQ	0.0838
C.V.	107.0028		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
INTERCEP	1	3.668225	13.911354	0.264	0.7920	INTERCEPT
CTOT_C9	1	0.0001246747	0.0001269045	0.982	0.3260	PTA-TOTAL - CHARGES - 1ST HALF YR 2
CTOTOC9	1	8.693949	1.689292	5.147	0.0001	
FEMALE	1	2.584028	1.326195	1.948	0.0514	
WHITE	1	2.669000	2.144287	1.245	0.2133	
EVERQUIT	1	70.692381	9.996463	7.072	0.0001	QUIT ON ANY HSPC CLAIM
ENDQUIT	1	-57.719991	10.325213	-5.590	0.0001	QUIT ON LAST HSPC CLAIM
SWITCHER	1	55.689832	27.289512	2.041	0.0414	TIMES SWITCHED PROVIDERS
AGECAT1	1	0.481340	0.231940	2.075	0.0380	AGE (<65)
AGECAT2	1	0.376612	0.190084	1.981	0.0476	AGE (65-74)
AGECAT3	1	0.374447	0.168343	2.224	0.0262	AGE (75-84)
AGECAT4	1	0.297803	0.151303	1.968	0.0491	AGE (>84)
NOCANCER	1	-0.042897	2.979888	-0.014	0.9885	
COLON	1	0.350383	1.866064	0.188	0.8511	
LUNG	1	1.423546	1.897392	0.750	0.4531	
BREAST	1	0.298350	3.123952	0.096	0.9239	
REPRO	1	3.852786	2.397740	1.607	0.1082	
URINARY	1	1.101431	3.407005	0.323	0.7465	
LEUKEMIA	1	-14.584526	5.504802	-2.649	0.0081	
ENR85	1	-6.963678	2.190943	-3.178	0.0015	
ENR86	1	-11.838448	2.302127	-5.142	0.0001	
LATENRLL	1	-9.312626	2.275204	-4.093	0.0001	
PROV2	1	-0.829616	6.559748	-0.126	0.8994	
PROV3	1	-5.017125	10.193400	-0.492	0.6226	
PROV4	1	-3.933516	4.416543	-0.891	0.3732	
PROV5	1	7.941529	6.489941	1.224	0.2212	
PROV6	1	7.758489	6.766424	1.147	0.2516	
PROV7	1	8.893026	4.283203	2.076	0.0379	
PROV8	1	21.557332	6.012626	3.585	0.0003	
PROV9	1	6.627829	5.719153	1.159	0.2466	
PROV10	1	-3.519071	22.135306	-0.159	0.8737	
PROV11	1	-5.665673	5.512966	-1.028	0.3042	
PROV12	1	6.394247	5.844962	1.094	0.2740	
PROV13	1	-11.654822	6.601710	-1.765	0.0776	
PROV14	1	0.182430	12.021867	0.015	0.9879	

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
PROV19	1	13.904474	11.520299	1.207	0.2275	
PROV20	1	-3.029580	7.693391	-0.394	0.6938	
PROV21	1	6.291340	14.761504	0.426	0.6700	
PROV22	1	-11.410241	11.963021	-0.954	0.3403	
PROV23	1	4.673940	7.145256	0.654	0.5131	
PROV24	1	-7.169701	26.941175	-0.266	0.7902	
PROV25	1	-4.033080	26.941689	-0.150	0.8810	
PROV26	1	4.216352	7.350773	0.574	0.5663	
PROV27	1	6.092234	7.364050	0.827	0.4081	
PROV28	1	19.512659	9.448497	2.065	0.0390	
PROV29	1	1.876658	11.162275	0.168	0.8665	
PROV30	1	6.768025	6.345011	1.067	0.2862	
PROV31	1	15.595002	22.074520	0.706	0.4799	
PROV32	1	16.681927	7.132392	2.339	0.0194	
PROV33	1	-6.709739	4.677163	-1.435	0.1515	
PROV34	1	12.508830	10.210037	1.225	0.2206	
PROV35	1	-3.290989	7.208147	-0.457	0.6480	
PROV36	1	-4.683288	7.522099	-0.623	0.5336	
PROV37	1	13.697936	4.640335	2.952	0.0032	
PROV38	1	2.755537	4.429938	0.622	0.5340	
PROV39	1	-5.738413	11.149812	-0.515	0.6068	
PROV40	1	11.006059	7.715112	1.427	0.1538	
PROV41	1	2.661536	26.902553	0.099	0.9212	
PROV42	1	20.642250	4.734574	4.360	0.0001	
PROV43	1	-6.813634	9.509515	-0.717	0.4737	
PROV44	1	-7.859872	9.906880	-0.793	0.4276	
PROV45	1	12.066874	17.285834	0.698	0.4852	
PROV46	1	-15.697364	22.146105	-0.709	0.4785	
PROV47	1	2.583136	4.816278	0.536	0.5918	
PROV48	1	15.296713	5.866203	2.608	0.0092	
PROV49	1	15.323413	7.045445	2.175	0.0297	
PROV50	1	7.251686	11.546735	0.628	0.5300	
PROV51	1	6.978931	4.230412	1.650	0.0991	
PROV52	1	-1.734992	17.269892	-0.100	0.9200	
PROV53	1	-16.376083	8.346912	-1.962	0.0498	
PROV54	1	-4.222140	6.259580	-0.675	0.5000	

DEP VARIABLE: HTOTLOS LENGTH OF TOTAL HSPC BENEFIT

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MOOEL	25	111350	4453.999	3.309	0.0001
ERROR	582	783465	1346.160		
C TOTAL	607	894815			

ROOT MSE	36.690051	R-SQUARE	0.1244
DEP MEAN	33.253289	ADJ R-SQ	0.0868
C.V.	110.3351		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTEO DF OF O OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO O, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

SWITCHER=

VARIABLE	OF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=O	PROB > |T|	VARIABLE LABEL
INTERCEP	1	38.036690	36.551645	1.041	0.2985	INTERCEPT
CTOT_C9	1	.00009977112	0.0002130215	0.468	0.6397	PTA-TOTAL - CHARGES - 1ST HALF YR 2
CTOTOC9	1	6.717550	3.904883	1.720	0.0859	
FEMALE	1	9.134147	3.178545	2.874	0.0042	
WHITE	1	-1.925219	4.677458	-0.412	0.6808	
EVERQUIT	1	67.343950	13.345975	5.046	0.0001	QUIT ON ANY HSPC CLAIM
ENOQUIT	1	-53.258701	15.024258	-3.545	0.0004	QUIT ON LAST HSPC CLAIM
SWITCHER	O	O	.	.	.	TIMES SWITCHEO PROVIOERS
AGECAT1	1	-0.294772	0.603169	-0.489	0.6252	AGE (<65)
AGECAT2	1	-0.238871	0.500855	-0.477	0.6336	AGE (65-74)
AGECAT3	1	-0.148558	0.443992	-0.335	0.7381	AGE (75-84)
AGECAT4	1	-0.102324	0.401814	-0.255	0.7991	AGE (>84)
NOCANCER	1	-7.777125	10.287879	-0.756	0.4500	
COLON	1	4.088198	4.716393	0.867	0.3864	
LUNG	1	4.093352	5.041115	0.812	0.4171	
BREAST	1	1.630930	7.040311	0.232	0.8169	
REPRO	1	12.702446	6.097392	2.083	0.0377	
URINARY	1	-0.263398	8.056077	-0.033	0.9739	
LEUKEMIA	1	6.154176	13.707291	0.449	0.6536	
ENR85	1	1.802579	3.883466	0.464	0.6427	
ENR86	1	-5.428701	4.607483	-1.178	0.2392	
LATENRLL	1	-4.844055	10.581456	-0.458	0.6473	
PROV2	1	2.560601	10.319072	0.248	0.8041	
PROV3	1	1.232140	11.048173	0.112	0.9112	
PROV4	1	0.315880	10.321392	0.031	0.9756	
PROV5	1	21.018360	21.022095	1.000	0.3178	

DEP VARIABLE: HTDTLOS LENGTH DF TOTAL HSPC BENEFIT

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	115	539352	4690.019	3.869	0.0001
ERROR	5185	6284961	1212.143		
C TOTAL	5300	6824313			

ROOT MSE	34.815843	R-SQUARE	0.0790
DEP MEAN	32.140728	ADJ R-SQ	0.0586
C.V.	108.3231		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
INTERCEP	1	20.018666	13.641187	1.468	0.1423	INTERCEPT
CTOT_C9	1	.00002617368	.00009918579	0.264	0.7919	PTA-TOTAL - CHARGES - 1ST HALF YR 2
CTOTOC9	1	5.193203	1.315371	3.948	0.0001	
FEMALE	1	4.017237	1.016713	3.951	0.0001	
WHITE	1	1.099189	1.714823	0.641	0.5216	
EVERQUIT	1	48.422483	6.150507	7.873	0.0001	QUIT ON ANY HSPC CLAIM
ENDQUIT	1	-37.628817	6.435633	-5.847	0.0001	QUIT ON LAST HSPC CLAIM
SWITCHER	1	46.731831	12.524249	3.731	0.0002	TIMES SWITCHED PROVIDERS
AGECAT1	1	0.198321	0.170672	1.162	0.2453	AGE (<65)
AGECAT2	1	0.082142	0.139650	0.588	0.5564	AGE (65-74)
AGECAT3	1	0.079884	0.123693	0.646	0.5184	AGE (75-84)
AGECAT4	1	0.066686	0.111082	0.600	0.5483	AGE (>84)
NOCANCER	1	3.138897	2.221480	1.413	0.1577	
COLON	1	-1.078035	1.463692	-0.737	0.4614	
LUNG	1	-1.870640	1.533536	-1.220	0.2226	
BREAST	1	2.790474	2.320841	1.202	0.2293	
REPRO	1	1.511749	1.901667	0.795	0.4267	
URINARY	1	-0.117143	2.680738	-0.044	0.9651	
LEUKEMIA	1	-10.188515	4.560346	-2.234	0.0255	
ENR85	1	0.153827	1.634407	0.094	0.9250	
ENR86	1	-1.632669	1.716247	-0.951	0.3415	
LATENRLL	1	-12.181677	1.518871	-8.020	0.0001	
PROV2	1	11.847530	11.692686	1.013	0.3110	
PROV3	1	4.160064	13.190723	0.315	0.7525	
PROV4	1	-2.484684	9.851751	-0.252	0.8009	
PROV5	1	-2.321910	14.479163	-0.160	0.8726	
PROV6	1	7.001188	10.068474	0.695	0.4869	
PROV7	1	-3.457783	11.618391	-0.298	0.7660	
PROV8	1	5.788712	10.307398	0.562	0.5744	
PROV9	1	5.903188	9.840934	0.600	0.5486	
PROV10	1	3.563693	9.881161	0.361	0.7184	
PROV11	1	5.600403	10.347546	0.541	0.5884	
PROV12	1	3.605398	11.411424	0.316	0.7521	
PROV13	1	-2.766062	10.377703	-0.267	0.7898	
PROV14	1	5.592523	9.736639	0.574	0.5657	

PROV15	1	7.415341	10.694006	0.693	0.4881
PROV16	1	3.482530	9.621415	0.362	0.7174
PROV17	1	3.108579	14.489482	0.215	0.8301
PROV18	1	14.730293	13.226397	1.114	0.2655

HHA-BASED HOSPICE PATS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
PROV19	1	-0.918465	22.188890	-0.041	0.9670	
PROV20	1	7.161080	16.136344	0.444	0.6572	
PROV21	1	33.779521	19.804635	1.706	0.0881	
PROV22	1	14.950685	10.638933	1.405	0.1600	
PROV23	1	9.168608	26.369784	0.348	0.7281	
PROV24	1	5.882597	9.670451	0.608	0.5430	
PROV25	1	-10.773225	10.469432	-1.029	0.3035	
PROV26	1	-0.342081	9.775471	-0.035	0.9721	
PROV27	1	11.767378	11.327704	1.039	0.2989	
PROV28	1	-4.502791	22.231278	-0.203	0.8395	
PROV29	1	6.274689	9.655221	0.650	0.5158	
PROV30	1	11.891603	10.526363	1.130	0.2587	
PROV31	1	38.260650	26.351361	1.452	0.1466	
PROV32	1	18.831854	13.744640	1.370	0.1707	
PROV33	1	-8.203292	22.204451	-0.369	0.7118	
PROV34	1	12.646773	12.818167	0.987	0.3239	
PROV35	1	20.811196	14.103593	1.476	0.1401	
PROV36	1	33.402934	15.482175	2.158	0.0310	
PROV37	1	4.891591	19.789569	0.247	0.8048	
PROV38	1	-0.386741	10.871646	-0.036	0.9716	
PROV39	1	2.229524	9.463971	0.236	0.8138	
PROV40	1	2.281303	14.958769	0.153	0.8788	
PROV41	1	2.381931	10.317900	0.231	0.8174	
PROV42	1	-0.422250	13.029839	-0.032	0.9741	
PROV43	1	5.437277	10.560635	0.515	0.6067	
PROV44	1	14.246121	13.488436	1.056	0.2909	
PROV45	1	-30.011447	26.446826	-1.135	0.2565	
PROV46	1	5.519948	12.760840	0.433	0.6653	
PROV47	1	-5.313970	27.120084	-0.196	0.8447	
PROV48	1	13.962726	11.001923	1.269	0.2045	
PROV49	1	-12.058486	11.661803	-1.034	0.3012	
PROV50	1	7.000768	9.907975	0.707	0.4799	
PROV51	1	1.206129	10.477694	0.115	0.9084	
PROV52	1	1.795571	13.481390	0.133	0.8940	
PROV53	1	7.868425	11.263602	0.699	0.4849	
PROV54	1	11.692480	10.415168	1.123	0.2616	
PROV55	1	-0.043624	11.137513	-0.004	0.9969	
PROV56	1	8.398958	11.198099	0.750	0.4533	
PROV57	1	1.112406	11.152148	0.100	0.9205	
PROV58	1	-3.427266	9.771273	-0.351	0.7258	
PROV59	1	18.106174	26.385454	0.686	0.4926	
PROV60	1	3.776470	9.806865	0.385	0.7002	
PROV61	1	-12.465212	10.722547	-1.163	0.2451	
PROV62	1	-5.373857	12.122001	-0.443	0.6576	
PROV63	1	1.426151	9.906187	0.144	0.8855	
PROV64	1	-6.058551	10.998768	-0.551	0.5818	
PROV65	1	7.215878	11.648025	0.619	0.5356	
PROV66	1	20.442379	13.797593	1.482	0.1385	
PROV67	1	-7.269404	36.124226	-0.201	0.8405	
PROV68	1	5.018408	12.770094	0.393	0.6943	

PROV15	1	7.415341	10.694006	0.693	0.4881
PROV16	1	3.482530	9.621415	0.362	0.7174
PROV17	1	3.108579	14.489482	0.215	0.8301
PROV18	1	14.730293	13.226397	1.114	0.2655

TABLE 3.16

```
        .593E-01

ITERATION  3      FUNCTION     1670.454
PARAM:    .624      -.920      -.672      -.913      -.943      .102E-02 -.108
         -.102E-01 -.313       .480      -.136E-01  .128       .536     -.239
         -.274
GRADNT   -.782E-02 -.204E-03  .472E-06 -.359E-04 -.113E-03 -13.7      -.104
         -.418E-02 -.337E-02 -.406E-02 -.150E-02 -.243E-02 -.348E-02 -.575
         -.102E-03

ITERATION  4      FUNCTION     1670.454
PARAM:    .624      -.920      -.672      -.914      -.943      .102E-02 -.108
         -.102E-01 -.313       .480      -.136E-01  .128       .536     -.239
         -.274
GRADNT   -.119E-06 -.311E-08 -.635E-08 -.871E-09 -.442E-09 -.215E-03 -.165
         -.637E-07 -.388E-07 -.772E-07 -.302E-07 -.340E-07--.474E-07 -.126E
         -.326E-09
** FUNCTION HAS CONVERGED
** B-VECTOR HAS CONVERGED

*****************************************************************************


    Log-Likelihood..............    -1670.5
    Restricted (Slopes=0) Log-L.    -1755.0
    Chi-Squared (14)............     169.11
    Significance Level..........     .32173E-13

 Variable  Coefficient  Std. Error  T-ratio (Sig.Lvl)   Mean of X  Std.Dev
 ---------------------------------------------------------------------------

ONE         .624236       .3101       2.013 ( .04408)   1.0000       .000
COLON      -.919636       .1076      -8.549 ( .00000)   .24763       .4317
LUNG       -.671823       .1099      -6.112 ( .00000)   .22591       .418
BREAST     -.913509       .2166      -4.217 ( .00002)   .42259E-01   .201
PROST      -.942829       .1475      -6.391 ( .00000)   .10190       .3025
EXPOTOT     .101963E-02   .2280E-03   4.472 ( .00001)   1246.2       1030
EXPOTOT2   -.107738E-05   .2464E-06  -4.373 ( .00001)   .10579E+07   .951
SEX        -.101989E-01   .8584E-01   -.119 ( .90543)   .47630       .4995
WHITE      -.313244       .2239      -1.399 ( .16178)   .88073       .3241
BLACK       .480426       .2650       1.813 ( .06981)   .84518E-01   .278
AGECAT1    -.135772E-01   .2055       -.066 ( .94732)   .45182       .497
AGECAT2     .127547       .2085        .612 ( .54062)   .37125       .4832
AGECAT3     .536347       .2301       2.331 ( .01973)   .13231       .338
PRIOR      -.239078       .1039      -2.301 ( .02137)   .29779       .457
HHA        -.274428       .1648      -1.665 ( .09590) • .93207E-01   .2907


Frequencies of actual vs. predicted outcomes
Predicted outcome has the highest probability.

                    Predicted

 Actual     TOTAL      0      1

 TOTAL       2532   1332   1200

     0       1259    806    453
     1       1273    526    747
```

TABLE 3.22

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	4737761064	215352776	19.250	0.0001
ERROR	16196	181184035072	11186962		
C TOTAL	16218	185921796137			

ROOT MSE	3344.692	R-SQUARE	0.0255
DEP MEAN	3625.329	ADJ R-SQ	0.0242
C.V.	92.25898		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2388.895	1194.407	2.000	0.0455	INTERCEPT
HOSPICE	1	-941.690	92.331285	-10.199	0.0001	HOSPICE BENEFIT PATIENT
FY86	1	75.528284	77.395227	0.976	0.3291	DIED IN FY86
HOSP86	1	-162.652	109.204	-1.489	0.1364	HOSPICE*FY86
SEX	1	48.790507	55.379308	0.881	0.3783	FEMALE
AGE	1	64.124443	32.158656	1.994	0.0462	AGE AT DEATH
AGE2	1	-0.558598	0.216165	-2.584	0.0098	AGE SQUARED
COLON	1	-93.324224	72.599280	-1.285	0.1986	COLON CANCER
LUNG	1	-237.637	73.930794	-3.214	0.0013	LUNG CANCER
BREAST	1	-495.077	136.347	-3.631	0.0003	BREAST CANCER
PROSTATE	1	-407.263	96.998012	-4.199	0.0001	PROSTATE CANCER
URINARY	1	-96.104995	135.480	-0.709	0.4781	URINARY CANCER
LEUKEM	1	639.714	168.338	3.800	0.0001	LEUKEMIA
EXPO	1	0.078604	0.037930	2.072	0.0382	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	437.273	79.236620	5.519	0.0001	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-410.279	77.880036	-5.268	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-343.045	82.522895	-4.157	0.0001	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-274.008	123.521	-2.218	0.0265	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	203.382	143.184	1.420	0.1555	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.026413	0.008908619	2.965	0.0030	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.036386	0.009925962	3.666	0.0002	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.197373	0.090644	2.177	0.0295	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.112071	0.101386	1.105	0.2690	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	3.2E+08	DF: 1	F VALUE:	28.7453
	DENOMINATOR:	11186962	DF:16196	PROB >F :	0.0001
TEST: TEST2	NUMERATOR:	6.3E+08	DF: 1	F VALUE:	55.8953
	DENOMINATOR:	11186962	DF:16196	PROB >F :	0.0001
TEST: TEST3	NUMERATOR:	13727808	DF: 1	F VALUE:	1.2271
	DENOMINATOR:	11186962	DF:16196	PROB >F :	0.2680

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	4059887889	184540359	17.248	0.0001
ERROR	8255	88321295143	10699127		
C TOTAL	8277	92381183032			

ROOT MSE	3270.952	R-SQUARE	0.0439
DEP MEAN	3361.900	ADJ R-SQ	0.0414
C.V.	97.29475		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2520.621	1481.560	1.701	0.0889	INTERCEPT
HOSPICE	1	-1181.156	148.850	-7.935	0.0001	HOSPICE BENEFIT PATIENT
FY86	1	41.956038	85.611662	0.490	0.6241	DIED IN FY86
HOSP86	1	-280.222	173.007	-1.620	0.1053	HOSPICE*FY86
SEX	1	16.180581	75.774259	0.214	0.8309	FEMALE
AGE	1	64.187047	40.029611	1.603	0.1089	AGE AT DEATH
AGE2	1	-0.663291	0.270448	-2.453	0.0142	AGE SQUARED
COLON	1	-224.796	100.964	-2.227	0.0260	COLON CANCER
LUNG	1	-216.266	100.499	-2.152	0.0314	LUNG CANCER
BREAST	1	-658.846	184.524	-3.571	0.0004	BREAST CANCER
PROSTATE	1	-524.355	131.210	-3.996	0.0001	PROSTATE CANCER
URINARY	1	-44.608168	178.472	-0.250	0.8026	URINARY CANCER
LEUKEM	1	882.729	217.890	4.051	0.0001	LEUKEMIA
EXPO	1	0.101815	0.055981	1.819	0.0690	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	618.673	101.788	6.078	0.0001	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-285.962	100.432	-2.847	0.0044	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-172.491	107.171	-1.609	0.1075	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-281.494	156.974	-1.793	0.0730	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	225.239	187.456	1.202	0.2296	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.021997	0.010922	2.014	0.0440	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.033960	0.012497	2.718	0.0066	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.053463	0.121851	0.439	0.6608	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.174407	0.136268	1.280	0.2006	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	1.4E+08	DF: 1	F VALUE:	13.4987
	DENOMINATOR:	10699127	DF: 8255	PROB >F :	0.0002
TEST: TEST2	NUMERATOR:	4.7E+08	DF: 1	F VALUE:	44.1393
	DENOMINATOR:	10699127	DF: 8255	PROB >F :	0.0001
TEST: TEST3	NUMERATOR:	26190602	DF: 1	F VALUE:	2.4479
	DENOMINATOR:	10699127	DF: 8255	PROB >F :	0.1177

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	2297234170	104419735	12.046	0.0001
ERROR	8255	71558871794	8668549		
C TOTAL	8277	73856105964			

ROOT MSE	2944.240	R-SQUARE	0.0311
DEP MEAN	2332.281	ADJ R-SQ	0.0285
C.V.	126.2387		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1124.609	1333.578	0.843	0.3991	INTERCEPT
HOSPICE	1	482.325	133.982	3.600	0.0003	HOSPICE BENEFIT PATIENT
FY86	1	-69.853862	77.060524	-0.906	0.3647	DIED IN FY86
HOSP86	1	-176.452	155.726	-1.133	0.2572	HOSPICE*FY86
SEX	1	112.656	68.205709	1.652	0.0986	FEMALE
AGE	1	43.514212	36.031338	1.208	0.2272	AGE AT DEATH
AGE2	1	-0.380466	0.243435	-1.563	0.1181	AGE SQUARED
COLON	1	251.472	90.879145	2.767	0.0057	COLON CANCER
LUNG	1	-104.566	90.461221	-1.156	0.2477	LUNG CANCER
BREAST	1	-396.484	166.093	-2.387	0.0170	BREAST CANCER
PROSTATE	1	-349.747	118.105	-2.961	0.0031	PROSTATE CANCER
URINARY	1	-97.387740	160.645	-0.606	0.5444	URINARY CANCER
LEUKEM	1	507.069	196.127	2.585	0.0097	LEUKEMIA
EXPO	1	0.013343	0.050389	0.265	0.7912	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	420.498	91.620826	4.590	0.0001	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-648.728	90.400376	-7.176	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-327.961	96.466410	-3.400	0.0007	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	13.824548	141.295	0.098	0.9221	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-8.310509	168.732	-0.049	0.9607	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.032526	0.009830857	3.309	0.0009	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.042078	0.011249	3.741	0.0002	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.055124	0.109680	-0.503	0.6153	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.030416	0.122657	0.248	0.8042	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	3.7E+08	DF: 1	F VALUE:	42.9221
	DENOMINATOR:	8668549	DF: 8255	PROB >F :	0.0001
TEST: TEST2	NUMERATOR:	3.5E+08	DF: 1	F VALUE:	40.4758
	DENOMINATOR:	8668549	DF: 8255	PROB >F :	0.0001
TEST: TEST3	NUMERATOR:	27987934	DF: 1	F VALUE:	3.2287
	DENOMINATOR:	8668549	DF: 8255	PROB >F :	0.0724

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	2495386748	113426670	10.785	0.0001
ERROR	5890	61945678957	10517093		
C TOTAL	5912	64441065705			

ROOT MSE	3243.007	R-SQUARE	0.0387
DEP MEAN	3232.130	ADJ R-SQ	0.0351
C.V.	100.3365		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1461.032	1676.449	0.872	0.3835	INTERCEPT
HOSPICE	1	-1074.602	228.289	-4.707	0.0001	HOSPICE BENEFIT PATIENT
FY86	1	16.134882	92.861675	0.174	0.8621	DIED IN FY86
HOSP86	1	-89.900292	262.822	-0.342	0.7323	HOSPICE*FY86
SEX	1	-8.136899	89.358506	-0.091	0.9274	FEMALE
AGE	1	84.476349	45.333563	1.863	0.0625	AGE AT DEATH
AGE2	1	-0.789373	0.306662	-2.574	0.0101	AGE SQUARED
COLON	1	-481.598	119.075	-4.044	0.0001	COLON CANCER
LUNG	1	-276.228	119.789	-2.306	0.0211	LUNG CANCER
BREAST	1	-668.439	225.053	-2.970	0.0030	BREAST CANCER
PROSTATE	1	-498.599	148.829	-3.350	0.0008	PROSTATE CANCER
URINARY	1	-98.614379	206.445	-0.478	0.6329	URINARY CANCER
LEUKEM	1	694.804	247.060	2.812	0.0049	LEUKEMIA
EXPO	1	0.198720	0.070103	2.835	0.0046	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	455.065	118.086	3.854	0.0001	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-164.551	112.981	-1.456	0.1453	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-169.403	121.268	-1.397	0.1625	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-306.844	167.175	-1.835	0.0665	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	157.364	210.583	0.747	0.4549	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.026084	0.012097	2.156	0.0311	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.053134	0.014363	3.699	0.0002	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.036301	0.118993	-0.305	0.7603	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.224559	0.142812	1.572	0.1159	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	73194426	DF: 1	F VALUE:	6.9596
	DENOMINATOR:	10517093	DF: 5890	PROB >F :	0.0084
TEST: TEST2	NUMERATOR:	1.9E+08	DF: 1	F VALUE:	17.7214
	DENOMINATOR:	10517093	DF: 5890	PROB >F :	0.0001
TEST: TEST3	NUMERATOR:	935645	DF: 1	F VALUE:	0.0890
	DENOMINATOR:	10517093	DF: 5890	PROB >F :	0.7655

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	897531168	40796871	6.092	0.0001
ERROR	5890	39443806422	6696741		
C TOTAL	5912	40341337591			

ROOT MSE	2587.806	R-SQUARE	0.0222
DEP MEAN	1820.266	ADJ R-SQ	0.0186
C.V.	142.1664		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1557.425	1337.748	1.164	0.2444	INTERCEPT
HOSPICE	1	179.315	182.167	0.984	0.3250	HOSPICE BENEFIT PATIENT
FY86	1	-135.569	74.100376	-1.830	0.0674	DIED IN FY86
HOSP86	1	87.090830	209.722	0.415	0.6780	HOSPICE*FY86
SEX	1	44.563517	71.304970	0.625	0.5320	FEMALE
AGE	1	21.087012	36.174601	0.583	0.5600	AGE AT DEATH
AGE2	1	-0.230484	0.244706	-0.942	0.3463	AGE SQUARED
COLON	1	79.185970	95.017989	0.833	0.4047	COLON CANCER
LUNG	1	-142.890	95.587344	-1.495	0.1350	LUNG CANCER
BREAST	1	-107.898	179.584	-0.601	0.5480	BREAST CANCER
PROSTATE	1	-314.990	118.761	-2.652	0.0080	PROSTATE CANCER
URINARY	1	-100.375	164.736	-0.609	0.5423	URINARY CANCER
LEUKEM	1	472.618	197.145	2.397	0.0165	LEUKEMIA
EXPO	1	0.160368	0.055940	2.867	0.0042	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	216.186	94.228286	2.294	0.0218	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-380.619	90.154970	-4.222	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-261.673	96.767347	-2.704	0.0069	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-44.747770	133.400	-0.335	0.7373	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-80.850008	168.038	-0.481	0.6304	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.032145	0.009653371	3.330	0.0009	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.031864	0.011461	2.780	0.0055	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.046978	0.094952	-0.495	0.6208	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.160997	0.113959	1.413	0.1578	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	29829044	DF: 1	F VALUE:	4.4543
	DENOMINATOR:	6696741	DF: 5890	PROB >F :	0.0349
TEST: TEST2	NUMERATOR:	86243621	DF: 1	F VALUE:	12.8784
	DENOMINATOR:	6696741	DF: 5890	PROB >F :	0.0003
TEST: TEST3	NUMERATOR:	404105	DF: 1	F VALUE:	0.0603
	DENOMINATOR:	6696741	DF: 5890	PROB >F :	0.8060

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1896424940	86201134	12.255	0.0001
ERROR	5890	41429001871	7033786		
C TOTAL	5912	43325426811			

ROOT MSE	2652.129	R-SQUARE	0.0438
DEP MEAN	1817.593	ADJ R-SQ	0.0402
C.V.	145.9144		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2004.434	1370.999	1.462	0.1438	INTERCEPT
HOSPICE	1	613.373	186.695	3.285	0.0010	HOSPICE BENEFIT PATIENT
FY86	1	-77.162243	75.942211	-1.016	0.3096	DIED IN FY86
HOSP86	1	5.945885	214.935	0.028	0.9779	HOSPICE*FY86
SEX	1	110.205	73.077323	1.508	0.1316	FEMALE
AGE	1	16.611393	37.073755	0.448	0.6541	AGE AT DEATH
AGE2	1	-0.233620	0.250788	-0.932	0.3516	AGE SQUARED
COLON	1	248.876	97.379752	2.556	0.0106	COLON CANCER
LUNG	1	-71.448582	97.963258	-0.729	0.4658	LUNG CANCER
BREAST	1	-123.027	184.048	-0.668	0.5039	BREAST CANCER
PROSTATE	1	-81.368803	121.712	-0.669	0.5038	PROSTATE CANCER
URINARY	1	134.101	168.831	0.794	0.4271	URINARY CANCER
LEUKEM	1	165.984	202.045	0.822	0.4114	LEUKEMIA
EXPO	1	0.085576	0.057330	1.493	0.1356	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	249.072	96.570420	2.579	0.0099	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-755.450	92.395857	-8.176	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-363.368	99.172591	-3.664	0.0003	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	29.311815	136.716	0.214	0.8302	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-120.037	172.214	-0.697	0.4858	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.011964	0.009893315	1.209	0.2266	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.026347	0.011746	2.243	0.0249	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.011230	0.097312	0.115	0.9081	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.109629	0.116791	0.939	0.3479	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	1.4E+08	DF: 1	F VALUE:	20.1659
	DENOMINATOR:	7033786	DF: 5890	PROB >F :	0.0001
TEST: TEST2	NUMERATOR:	2.8E+08	DF: 1	F VALUE:	39.7017
	DENOMINATOR:	7033786	DF: 5890	PROB >F :	0.0001
TEST: TEST3	NUMERATOR:	872098	DF: 1	F VALUE:	0.1240
	DENOMINATOR:	7033786	DF: 5890	PROB >F :	0.7248

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1884566833	85662129	7.506	0.0001
ERROR	4511	51485044758	11413222		
C TOTAL	4533	53369611592			

ROOT MSE	3378.346	R-SQUARE	0.0353
DEP MEAN	3289.188	ADJ R-SQ	0.0306
C.V.	102.7106		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2307.913	1957.054	1.179	0.2383	INTERCEPT
HOSPICE	1	-972.009	482.641	-2.014	0.0441	HOSPICE BENEFIT PATIENT
FY86	1	-8.896452	103.462	-0.086	0.9315	DIED IN FY86
HOSP86	1	330.505	622.730	0.531	0.5956	HOSPICE*FY86
SEX	1	-59.016679	106.343	-0.555	0.5789	FEMALE
AGE	1	60.484360	52.824346	1.145	0.2523	AGE AT DEATH
AGE2	1	-0.633477	0.356943	-1.775	0.0760	AGE SQUARED
COLON	1	-493.895	143.650	-3.438	0.0006	COLON CANCER
LUNG	1	-355.956	144.581	-2.462	0.0139	LUNG CANCER
BREAST	1	-915.351	281.337	-3.254	0.0011	BREAST CANCER
PROSTATE	1	-517.017	174.037	-2.971	0.0030	PROSTATE CANCER
URINARY	1	-95.860922	234.308	-0.409	0.6825	URINARY CANCER
LEUKEM	1	767.231	277.873	2.761	0.0058	LEUKEMIA
EXPO	1	0.285793	0.089992	3.176	0.0015	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	379.718	140.846	2.696	0.0070	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-119.228	131.166	-0.909	0.3634	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-129.880	140.084	-0.927	0.3539	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-267.869	193.333	-1.386	0.1660	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	275.210	246.027	1.119	0.2634	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.029373	0.013296	2.209	0.0272	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.055065	0.016231	3.393	0.0007	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.063503	0.153081	-0.415	0.6783	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.146438	0.177883	0.823	0.4104	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	16588962	DF: 1	F VALUE:	1.4535
	DENOMINATOR:	11413222	DF: 4511	PROB >F :	0.2280
TEST: TEST2	NUMERATOR:	4479426	DF: 1	F VALUE:	0.3925
	DENOMINATOR:	11413222	DF: 4511	PROB >F :	0.5310
TEST: TEST3	NUMERATOR:	3122248	DF: 1	F VALUE:	0.2736
	DENOMINATOR:	11413222	DF: 4511	PROB >F :	0.6010

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	678954101	30861550	4.892	0.0001
ERROR	4511	28458695685	6308733		
C TOTAL	4533	29137649786			

ROOT MSE	2511.719	R-SQUARE	0.0233
DEP MEAN	1565.655	ADJ R-SQ	0.0185
C.V.	160.4261		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1526.077	1455.023	1.049	0.2943	INTERCEPT
HOSPICE	1	208.588	358.832	0.581	0.5611	HOSPICE BENEFIT PATIENT
FY86	1	-112.782	76.921388	-1.466	0.1427	DIED IN FY86
HOSP86	1	811.785	462.985	1.753	0.0796	HOSPICE*FY86
SEX	1	126.518	79.063408	1.600	0.1096	FEMALE
AGE	1	14.314830	39.273633	0.364	0.7155	AGE AT DEATH
AGE2	1	-0.195508	0.265379	-0.737	0.4613	AGE SQUARED
COLON	1	-61.129792	106.800	-0.572	0.5671	COLON CANCER
LUNG	1	-207.401	107.493	-1.929	0.0537	LUNG CANCER
BREAST	1	-185.850	209.168	-0.889	0.3743	BREAST CANCER
PROSTATE	1	-322.370	129.392	-2.491	0.0128	PROSTATE CANCER
URINARY	1	-87.374444	174.202	-0.502	0.6160	URINARY CANCER
LEUKEM	1	321.093	206.592	1.554	0.1202	LEUKEMIA
EXPO	1	0.151682	0.066907	2.267	0.0234	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	115.718	104.715	1.105	0.2692	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-230.005	97.518522	-2.359	0.0184	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-156.033	104.149	-1.498	0.1342	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	78.327090	143.739	0.545	0.5858	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-27.369861	182.915	-0.150	0.8811	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.042052	0.009884923	4.254	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.035307	0.012067	2.926	0.0035	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.106401	0.113812	-0.935	0.3499	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.180133	0.132252	1.362	0.1733	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	4973432	DF: 1	F VALUE:	0.7883
	DENOMINATOR:	6308733	DF: 4511	PROB >F :	0.3746
TEST: TEST2	NUMERATOR:	84363027	DF: 1	F VALUE:	13.3724
	DENOMINATOR:	6308733	DF: 4511	PROB >F :	0.0003
TEST: TEST3	NUMERATOR:	14749302	DF: 1	F VALUE:	2.3379
	DENOMINATOR:	6308733	DF: 4511	PROB >F :	0.1263

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	609745239	27715693	5.101	0.0001
ERROR	4511	24507632193	5432860		
C TOTAL	4533	25117377432			

ROOT MSE	2330.850	R-SQUARE	0.0243
DEP MEAN	1343.150	ADJ R-SQ	0.0195
C.V.	173.5361		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1969.514	1350.246	1.459	0.1447	INTERCEPT
HOSPICE	1	512.431	332.993	1.539	0.1239	HOSPICE BENEFIT PATIENT
FY86	1	-49.902254	71.382260	-0.699	0.4845	DIED IN FY86
HOSP86	1	426.034	429.645	0.992	0.3214	HOSPICE*FY86
SEX	1	155.996	73.370033	2.126	0.0335	FEMALE
AGE	1	-0.078530	36.445529	-0.002	0.9983	AGE AT DEATH
AGE2	1	-0.112351	0.246269	-0.456	0.6483	AGE SQUARED
COLON	1	134.223	99.109395	1.354	0.1757	COLON CANCER
LUNG	1	-225.262	99.752032	-2.258	0.0240	LUNG CANCER
BREAST	1	-214.234	194.105	-1.104	0.2698	BREAST CANCER
PROSTATE	1	3.495789	120.075	0.029	0.9768	PROSTATE CANCER
URINARY	1	124.503	161.658	0.770	0.4412	URINARY CANCER
LEUKEM	1	131.140	191.715	0.684	0.4940	LEUKEMIA
EXPO	1	0.128752	0.062089	2.074	0.0382	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	148.377	97.174690	1.527	0.1269	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-406.360	90.496190	-4.490	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-143.458	96.649275	-1.484	0.1378	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	128.069	133.388	0.960	0.3370	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-116.907	169.743	-0.689	0.4910	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.018511	0.009173108	2.018	0.0437	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.025554	0.011198	2.282	0.0225	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.056712	0.105617	-0.537	0.5913	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.209962	0.122728	1.711	0.0872	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	20648978	DF: 1	F VALUE:	3.8008
	DENOMINATOR:	5432860	DF: 4511	PROB >F :	0.0513
TEST: TEST2	NUMERATOR:	77207459	DF: 1	F VALUE:	14.2112
	DENOMINATOR:	5432860	DF: 4511	PROB >F :	0.0002
TEST: TEST3	NUMERATOR:	4270649	DF: 1	F VALUE:	0.7861
	DENOMINATOR:	5432860	DF: 4511	PROB >F :	0.3753

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1118463318	50839242	8.446	0.0001
ERROR	4511	27153778829	6019459		
C TOTAL	4533	28272242147			

ROOT MSE	2453.459	R-SQUARE	0.0396
DEP MEAN	1484.031	ADJ R-SQ	0.0349
C.V.	165.324		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2885.306	1421.273	2.030	0.0424	INTERCEPT
HOSPICE	1	297.994	350.509	0.850	0.3953	HOSPICE BENEFIT PATIENT
FY86	1	-160.703	75.137157	-2.139	0.0325	DIED IN FY86
HOSP86	1	526.072	452.246	1.163	0.2448	HOSPICE*FY86
SEX	1	115.707	77.229491	1.498	0.1341	FEMALE
AGE	1	-10.366891	38.362661	-0.270	0.7870	AGE AT DEATH
AGE2	1	-0.061363	0.259223	-0.237	0.8129	AGE SQUARED
COLON	1	416.948	104.323	3.997	0.0001	COLON CANCER
LUNG	1	28.309724	104.999	0.270	0.7875	LUNG CANCER
BREAST	1	-461.254	204.316	-2.258	0.0240	BREAST CANCER
PROSTATE	1	-146.341	126.391	-1.158	0.2470	PROSTATE CANCER
URINARY	1	220.144	170.162	1.294	0.1958	URINARY CANCER
LEUKEM	1	15.214705	201.800	0.075	0.9399	LEUKEMIA
EXPO	1	0.012115	0.065355	0.185	0.8529	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	208.636	102.286	2.040	0.0414	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-807.338	95.256529	-8.475	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-188.641	101.733	-1.854	0.0638	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-161.984	140.405	-1.154	0.2487	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-282.792	178.672	-1.583	0.1135	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.029254	0.009655637	3.030	0.0025	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.014732	0.011787	1.250	0.2114	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.088143	0.111172	0.793	0.4279	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.081431	0.129184	0.630	0.5285	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1740580966	79117317	6.904	0.0001
ERROR	3968	45474290236	11460255		
C TOTAL	3990	47214871202			

ROOT MSE	3385.300	R-SQUARE	0.0369
DEP MEAN	3293.900	ADJ R-SQ	0.0315
C.V.	102.7748		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|	VARIABLE LABEL
INTERCEP	1	3027.734	2072.913	1.461	0.1442	INTERCEPT
HOSPICE	1	-1101.325	731.522	-1.506	0.1323	HOSPICE BENEFIT PATIENT
FY86	1	-48.948542	110.193	-0.444	0.6569	DIED IN FY86
HOSP86	1	468.574	862.675	0.543	0.5870	HOSPICE*FY86
SEX	1	-67.372305	113.772	-0.592	0.5538	FEMALE
AGE	1	40.892128	55.906359	0.731	0.4646	AGE AT DEATH
AGE2	1	-0.501518	0.377855	-1.327	0.1845	AGE SQUARED
COLON	1	-537.288	154.358	-3.481	0.0005	COLON CANCER
LUNG	1	-250.347	156.714	-1.597	0.1102	LUNG CANCER
BREAST	1	-996.855	294.075	-3.390	0.0007	BREAST CANCER
PROSTATE	1	-449.407	182.627	-2.461	0.0139	PROSTATE CANCER
URINARY	1	-45.515448	247.641	-0.184	0.8542	URINARY CANCER
LEUKEM	1	762.302	295.373	2.581	0.0099	LEUKEMIA
EXPO	1	0.305668	0.093354	3.274	0.0011	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	408.238	149.918	2.723	0.0065	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-142.740	138.420	-1.031	0.3025	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-148.196	146.261	-1.013	0.3110	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-252.864	198.099	-1.276	0.2019	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	330.932	251.652	1.315	0.1886	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.028559	0.013443	2.124	0.0337	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.050705	0.016762	3.025	0.0025	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.055105	0.155277	-0.355	0.7227	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.148514	0.181845	0.817	0.4141	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	10143556	DF: 1	F VALUE:	0.8851
	DENOMINATOR:	11460255	DF: 3968	PROB >F :	0.3469
TEST: TEST2	NUMERATOR:	2481834	DF: 1	F VALUE:	0.2166
	DENOMINATOR:	11460255	DF: 3968	PROB >F :	0.6417
TEST: TEST3	NUMERATOR:	2753771	DF: 1	F VALUE:	0.2403
	DENOMINATOR:	11460255	DF: 3968	PROB >F :	0.6240

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	568816644	25855302	4.193	0.0001
ERROR	3968	24466649133	6165990		
C TOTAL	3990	25035465777			

ROOT MSE	2483.141	R-SQUARE	0.0227
DEP MEAN	1522.612	ADJ R-SQ	0.0173
C.V.	163.0843		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1212.803	1520.496	0.798	0.4251	INTERCEPT
HOSPICE	1	212.667	536.576	0.396	0.6919	HOSPICE BENEFIT PATIENT
FY86	1	-167.782	80.827696	-2.076	0.0380	DIED IN FY86
HOSP86	1	381.837	632.778	0.603	0.5463	HOSPICE*FY86
SEX	1	86.232279	83.452533	1.033	0.3015	FEMALE
AGE	1	20.137553	41.007708	0.491	0.6234	AGE AT DEATH
AGE2	1	-0.226699	0.277160	-0.818	0.4134	AGE SQUARED
COLON	1	-88.000651	113.222	-0.777	0.4371	COLON CANCER
LUNG	1	-184.057	114.950	-1.601	0.1094	LUNG CANCER
BREAST	1	-142.167	215.706	-0.659	0.5099	BREAST CANCER
PROSTATE	1	-349.326	133.958	-2.608	0.0091	PROSTATE CANCER
URINARY	1	55.425270	181.647	0.305	0.7603	URINARY CANCER
LEUKEM	1	390.740	216.658	1.803	0.0714	LEUKEMIA
EXPO	1	0.143516	0.068476	2.096	0.0362	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	142.840	109.966	1.299	0.1940	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-163.589	101.532	-1.611	0.1072	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-127.367	107.283	-1.187	0.2352	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	114.244	145.307	0.786	0.4318	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	8.394926	184.589	0.045	0.9637	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.041827	0.009860891	4.242	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.031289	0.012295	2.545	0.0110	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.126333	0.113896	-1.109	0.2674	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.180650	0.133384	1.354	0.1757	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	2668758	DF: 1	F VALUE:	0.4328
	DENOMINATOR:	6165990	DF: 3968	PROB >F :	0.5106
TEST: TEST2	NUMERATOR:	26768815	DF: 1	F VALUE:	4.3414
	DENOMINATOR:	6165990	DF: 3968	PROB >F :	0.0373
TEST: TEST3	NUMERATOR:	716565	DF: 1	F VALUE:	0.1162
	DENOMINATOR:	6165990	DF: 3968	PROB >F :	0.7332

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	445960115	20270914	4.403	0.0001
ERROR	3968	18266427356	4603434		
C TOTAL	3990	18712387471			

ROOT MSE	2145.562	R-SQUARE	0.0238
DEP MEAN	1171.225	ADJ R-SQ	0.0184
C.V.	183.1895		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2052.013	1313.787	1.562	0.1184	INTERCEPT
HOSPICE	1	487.699	463.629	1.052	0.2929	HOSPICE BENEFIT PATIENT
FY86	1	-89.721878	69.839281	-1.285	0.1990	DIED IN FY86
HOSP86	1	406.121	546.753	0.743	0.4577	HOSPICE*FY86
SEX	1	59.532465	72.107275	0.826	0.4091	FEMALE
AGE	1	-7.431204	35.432766	-0.210	0.8339	AGE AT DEATH
AGE2	1	-0.074632	0.239480	-0.312	0.7553	AGE SQUARED
COLON	1	55.879167	97.829942	0.571	0.5679	COLON CANCER
LUNG	1	-240.110	99.323111	-2.417	0.0157	LUNG CANCER
BREAST	1	-200.993	186.381	-1.078	0.2809	BREAST CANCER
PROSTATE	1	-37.559318	115.747	-0.324	0.7456	PROSTATE CANCER
URINARY	1	244.596	156.952	1.558	0.1192	URINARY CANCER
LEUKEM	1	168.086	187.204	0.898	0.3693	LEUKEMIA
EXPO	1	0.172148	0.059167	2.910	0.0036	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	31.041020	95.016323	0.327	0.7439	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-183.445	87.728664	-2.091	0.0366	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-22.474360	92.698403	-0.242	0.8084	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	159.840	125.553	1.273	0.2031	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	6.198799	159.494	0.039	0.9690	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.022775	0.008520316	2.673	0.0075	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.022888	0.010624	2.154	0.0313	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.072211	0.098412	-0.734	0.4631	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.201633	0.115251	1.750	0.0803	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	5682165	DF: 1	F VALUE:	1.2343
	DENOMINATOR:	4603434	DF: 3968	PROB >F :	0.2666
TEST: TEST2	NUMERATOR:	42115492	DF: 1	F VALUE:	9.1487
	DENOMINATOR:	4603434	DF: 3968	PROB >F :	0.0025
TEST: TEST3	NUMERATOR:	1565572	DF: 1	F VALUE:	0.3401
	DENOMINATOR:	4603434	DF: 3968	PROB >F :	0.5598

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	519922395	23632836	5.090	0.0001
ERROR	3968	18425024387	4643403		
C TOTAL	3990	18944946783			

ROOT MSE	2154.856	R-SQUARE	0.0274
DEP MEAN	1153.483	ADJ R-SQ	0.0221
C.V.	186.8129		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2312.849	1319.478	1.753	0.0797	INTERCEPT
HOSPICE	1	491.270	465.638	1.055	0.2915	HOSPICE BENEFIT PATIENT
FY86	1	-128.260	70.141813	-1.829	0.0675	DIED IN FY86
HOSP86	1	562.700	549.121	1.025	0.3056	HOSPICE*FY86
SEX	1	63.459952	72.419631	0.876	0.3809	FEMALE
AGE	1	-9.303834	35.586254	-0.261	0.7938	AGE AT DEATH
AGE2	1	-0.082512	0.240518	-0.343	0.7316	AGE SQUARED
COLON	1	296.969	98.253725	3.022	0.0025	COLON CANCER
LUNG	1	-56.895253	99.753362	-0.570	0.5685	LUNG CANCER
BREAST	1	-307.271	187.188	-1.642	0.1008	BREAST CANCER
PROSTATE	1	2.097323	116.248	0.018	0.9856	PROSTATE CANCER
URINARY	1	203.433	157.632	1.291	0.1969	URINARY CANCER
LEUKEM	1	-74.989051	188.015	-0.399	0.6900	LEUKEMIA
EXPO	1	0.093100	0.059423	1.567	0.1173	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	36.516998	95.427918	0.383	0.7020	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-424.690	88.108690	-4.820	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	94.625081	93.099958	1.016	0.3095	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-132.166	126.096	-1.048	0.2946	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-126.288	160.185	-0.788	0.4305	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.041805	0.008557224	4.885	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.005515241	0.010670	0.517	0.6053	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.085524	0.098839	0.865	0.3869	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.092340	0.115750	0.798	0.4251	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	5882095	DF: 1	F VALUE:	1.2668
	DENOMINATOR:	4643403	DF: 3968	PROB >F :	0.2604
TEST: TEST2	NUMERATOR:	58550481	DF: 1	F VALUE:	12.6094
	DENOMINATOR:	4643403	DF: 3968	PROB >F :	0.0004
TEST: TEST3	NUMERATOR:	2951646	DF: 1	F VALUE:	0.6357
	DENOMINATOR:	4643403	DF: 3968	PROB >F :	0.4253

DEP VARIABLE: CTTP_R5 PTA-NEW TOTAL - REIMB - MONTH 5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1503731506	68351432	11.417	0.0001
ERROR	3968	23756093947	5986919		
C TOTAL	3990	25259825453			

ROOT MSE	2446.818	R-SQUARE	0.0595
DEP MEAN	1366.070	ADJ R-SQ	0.0543
C.V.	179.1137		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	551.222	1498.255	0.368	0.7130	INTERCEPT
HOSPICE	1	258.810	528.727	0.489	0.6245	HOSPICE BENEFIT PATIENT
FY86	1	-27.668788	79.645358	-0.347	0.7283	DIED IN FY86
HOSP86	1	472.731	623.522	0.758	0.4484	HOSPICE*FY86
SEX	1	9.067517	82.231799	0.110	0.9122	FEMALE
AGE	1	50.305642	40.407852	1.245	0.2132	AGE AT DEATH
AGE2	1	-0.428920	0.273105	-1.571	0.1164	AGE SQUARED
COLON	1	329.129	111.566	2.950	0.0032	COLON CANCER
LUNG	1	-195.408	113.269	-1.725	0.0846	LUNG CANCER
BREAST	1	179.402	212.550	0.844	0.3987	BREAST CANCER
PROSTATE	1	-200.325	131.999	-1.518	0.1292	PROSTATE CANCER
URINARY	1	21.133912	178.989	0.118	0.9060	URINARY CANCER
LEUKEM	1	133.953	213.489	0.627	0.5304	LEUKEMIA
EXPO	1	0.362256	0.067474	5.369	0.0001	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-63.100550	108.357	-0.582	0.5604	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-1044.622	100.047	-10.441	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-358.579	105.714	-3.392	0.0007	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-120.685	143.181	-0.843	0.3993	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-313.886	181.889	-1.726	0.0845	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.031036	0.009716647	3.194	0.0014	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.004457457	0.012115	0.368	0.7130	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.238399	0.112230	2.124	0.0337	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.026535	0.131433	0.202	0.8400	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	808791	DF: 1	F VALUE:	0.1351
	DENOMINATOR:	5986919	DF: 3968	PROB >F :	0.7132
TEST: TEST2	NUMERATOR:	21999590	DF: 1	F VALUE:	3.6746
	DENOMINATOR:	5986919	DF: 3968	PROB >F :	0.0553
TEST: TEST3	NUMERATOR:	3097744	DF: 1	F VALUE:	0.5174
	DENOMINATOR:	5986919	DF: 3968	PROB >F :	0.4720

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1603014785	72864308	6.281	0.0001
ERROR	3509	40708098560	11601054		
C TOTAL	3531	42311113345			

ROOT MSE	3406.032	R-SQUARE	0.0379
DEP MEAN	3308.086	ADJ R-SQ	0.0319
C.V.	102.9608		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	3396.626	2276.310	1.492	0.1357	INTERCEPT
HOSPICE	1	260.400	957.081	0.272	0.7856	HOSPICE BENEFIT PATIENT
FY86	1	-11.431423	117.276	-0.097	0.9224	DIED IN FY86
HOSP86	1	-119.595	1224.273	-0.098	0.9222	HOSPICE*FY86
SEX	1	-78.051044	121.882	-0.640	0.5220	FEMALE
AGE	1	31.228208	61.272215	0.510	0.6103	AGE AT DEATH
AGE2	1	-0.445469	0.413292	-1.078	0.2812	AGE SQUARED
COLON	1	-530.910	166.165	-3.195	0.0014	COLON CANCER
LUNG	1	-288.094	168.716	-1.708	0.0878	LUNG CANCER
BREAST	1	-1011.462	319.070	-3.170	0.0015	BREAST CANCER
PROSTATE	1	-423.520	192.565	-2.199	0.0279	PROSTATE CANCER
URINARY	1	89.027564	268.982	0.331	0.7407	URINARY CANCER
LEUKEM	1	742.615	313.983	2.365	0.0181	LEUKEMIA
EXPO	1	0.356043	0.104055	3.422	0.0006	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	334.472	161.437	2.072	0.0384	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-155.155	148.785	-1.043	0.2971	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-117.340	153.718	-0.763	0.4453	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-291.189	201.244	-1.447	0.1480	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	415.476	256.929	1.617	0.1059	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.031639	0.013734	2.304	0.0213	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.048985	0.017046	2.874	0.0041	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.00824709	0.156607	-0.053	0.9580	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.107708	0.184495	0.584	0.5594	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	4461284	DF: 1	F VALUE:	0.3846
	DENOMINATOR:	11601054	DF: 3509	PROB >F :	0.5352
TEST: TEST2	NUMERATOR:	4321138	DF: 1	F VALUE:	0.3725
	DENOMINATOR:	11601054	DF: 3509	PROB >F :	0.5417
TEST: TEST3	NUMERATOR:	133907	DF: 1	F VALUE:	0.0115
	DENOMINATOR:	11601054	DF: 3509	PROB >F :	0.9144

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	582479474	26476340	4.258	0.0001
ERROR	3509	21819552917	6218168		
C TOTAL	3531	22402032392			

ROOT MSE	2493.626	R-SQUARE	0.0260
DEP MEAN	1513.622	ADJ R-SQ	0.0199
C.V.	164.7455		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2087.927	1666.533	1.253	0.2103	INTERCEPT
HOSPICE	1	757.319	700.698	1.081	0.2799	HOSPICE BENEFIT PATIENT
FY86	1	-170.220	85.860069	-1.983	0.0475	DIED IN FY86
HOSP86	1	547.727	896.315	0.611	0.5412	HOSPICE*FY86
SEX	1	87.424312	89.232402	0.980	0.3273	FEMALE
AGE	1	-4.007587	44.858639	-0.089	0.9288	AGE AT DEATH
AGE2	1	-0.074412	0.302580	-0.246	0.8058	AGE SQUARED
COLON	1	-51.921050	121.653	-0.427	0.6696	COLON CANCER
LUNG	1	-181.456	123.520	-1.469	0.1419	LUNG CANCER
BREAST	1	-208.114	233.598	-0.891	0.3730	BREAST CANCER
PROSTATE	1	-302.047	140.981	-2.142	0.0322	PROSTATE CANCER
URINARY	1	171.058	196.927	0.869	0.3851	URINARY CANCER
LEUKEM	1	456.194	229.874	1.985	0.0473	LEUKEMIA
EXPO	1	0.163049	0.076181	2.140	0.0324	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	62.398446	118.191	0.528	0.5976	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-148.577	108.929	-1.364	0.1727	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-72.259391	112.540	-0.642	0.5209	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	148.472	147.335	1.008	0.3137	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	62.316386	188.103	0.331	0.7404	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.045259	0.010055	4.501	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.029796	0.012480	2.388	0.0170	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.135698	0.114655	-1.184	0.2367	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.164243	0.135072	1.216	0.2241	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	8471149	DF: 1	F VALUE:	1.3623
	DENOMINATOR:	6218168	DF: 3509	PROB >F :	0.2432
TEST: TEST2	NUMERATOR:	35770521	DF: 1	F VALUE:	5.7526
	DENOMINATOR:	6218168	DF: 3509	PROB >F :	0.0165
TEST: TEST3	NUMERATOR:	1111565	DF: 1	F VALUE:	0.1788
	DENOMINATOR:	6218168	DF: 3509	PROB >F :	0.6725

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	394035887	17910722	3.887	0.0001
ERROR	3509	16169725387	4608072		
C TOTAL	3531	16563761274			

ROOT MSE	2146.642	R-SQUARE	0.0238
DEP MEAN	1144.624	ADJ R-SQ	0.0177
C.V.	187.5412		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2496.803	1434.638	1.740	0.0819	INTERCEPT
HOSPICE	1	726.868	603.197	1.205	0.2283	HOSPICE BENEFIT PATIENT
FY86	1	-88.148205	73.912796	-1.193	0.2331	DIED IN FY86
HOSP86	1	213.900	771.595	0.277	0.7816	HOSPICE*FY86
SEX	1	99.185669	76.815875	1.291	0.1967	FEMALE
AGE	1	-21.672094	38.616641	-0.561	0.5747	AGE AT DEATH
AGE2	1	0.021409	0.260476	0.082	0.9345	AGE SQUARED
COLON	1	-3.263547	104.725	-0.031	0.9751	COLON CANCER
LUNG	1	-224.306	106.333	-2.109	0.0350	LUNG CANCER
BREAST	1	-217.468	201.093	-1.081	0.2796	BREAST CANCER
PROSTATE	1	1.471180	121.363	0.012	0.9903	PROSTATE CANCER
URINARY	1	265.629	169.525	1.567	0.1172	URINARY CANCER
LEUKEM	1	134.632	197.887	0.680	0.4963	LEUKEMIA
EXPO	1	0.219580	0.065580	3.348	0.0008	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-62.932619	101.745	-0.619	0.5363	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-126.753	93.771316	-1.352	0.1766	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	18.784623	96.880360	0.194	0.8463	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	134.091	126.833	1.057	0.2905	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	45.762798	161.929	0.283	0.7775	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.023552	0.008655838	2.721	0.0065	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.022247	0.010743	2.071	0.0385	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.080465	0.098701	-0.815	0.4150	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.201503	0.116277	1.733	0.0832	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	5557315	DF: 1	F VALUE:	1.2060
	DENOMINATOR:	4608072	DF: 3509	PROB >F :	0.2722
TEST: TEST2	NUMERATOR:	14741169	DF: 1	F VALUE:	3.1990
	DENOMINATOR:	4608072	DF: 3509	PROB >F :	0.0738
TEST: TEST3	NUMERATOR:	123343	DF: 1	F VALUE:	0.0268
	DENOMINATOR:	4608072	DF: 3509	PROB >F :	0.8701

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	457502312	20795560	5.076	0.0001
ERROR	3509	14377062160	4097196		
C TOTAL	3531	14834564472			

ROOT MSE	2024.153	R-SQUARE	0.0308
DEP MEAN	1013.307	ADJ R-SQ	0.0248
C.V.	199.7572		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	3353.670	1352.777	2.479	0.0132	INTERCEPT
HOSPICE	1	1238.588	568.778	2.178	0.0295	HOSPICE BENEFIT PATIENT
FY86	1	-69.487391	69.695283	-0.997	0.3188	DIED IN FY86
HOSP86	1	-325.085	727.567	-0.447	0.6550	HOSPICE*FY86
SEX	1	42.670008	72.432710	0.589	0.5558	FEMALE
AGE	1	-46.170908	36.413150	-1.268	0.2049	AGE AT DEATH
AGE2	1	0.155336	0.245613	0.632	0.5271	AGE SQUARED
COLON	1	168.532	98.749316	1.707	0.0880	COLON CANCER
LUNG	1	-73.470946	100.265	-0.733	0.4638	LUNG CANCER
BREAST	1	-224.693	189.618	-1.185	0.2361	BREAST CANCER
PROSTATE	1	98.614925	114.438	0.862	0.3889	PROSTATE CANCER
URINARY	1	175.537	159.852	1.098	0.2722	URINARY CANCER
LEUKEM	1	-98.812735	186.596	-0.530	0.5965	LEUKEMIA
EXPO	1	0.067046	0.061838	1.084	0.2783	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	15.235357	95.939708	0.159	0.8738	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-174.257	88.420663	-1.971	0.0488	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	250.522	91.352302	2.742	0.0061	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-90.450235	119.596	-0.756	0.4495	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-6.543237	152.689	-0.043	0.9658	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.046491	0.00816193	5.696	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.004771242	0.010130	0.471	0.6377	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.012471	0.093069	0.134	0.8934	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.111827	0.109642	1.020	0.3078	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	19819226	DF: 1	F VALUE:	4.8373
	DENOMINATOR:	4097196	DF: 3509	PROB >F :	0.0279
TEST: TEST2	NUMERATOR:	16500332	DF: 1	F VALUE:	4.0272
	DENOMINATOR:	4097196	DF: 3509	PROB >F :	0.0448
TEST: TEST3	NUMERATOR:	1214335	DF: 1	F VALUE:	0.2964
	DENOMINATOR:	4097196	DF: 3509	PROB >F :	0.5862

DEP VARIABLE: CTTP_R5 PTA-NEW TOTAL - REIMB - MONTH 5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	500247442	22738520	4.752	0.0001
ERROR	3509	16791710475	4785326		
C TOTAL	3531	17291957917			

ROOT MSE	2187.539	R-SQUARE	0.0289
DEP MEAN	1029.983	ADJ R-SQ	0.0228
C.V.	212.3858		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > |T|	VARIABLE LABEL
INTERCEP	1	488.484	1461.970	0.334	0.7383	INTERCEPT
HOSPICE	1	543.217	614.689	0.884	0.3769	HOSPICE BENEFIT PATIENT
FY86	1	-19.477024	75.320948	-0.259	0.7960	DIED IN FY86
HOSP86	1	741.874	786.295	0.944	0.3455	HOSPICE*FY86
SEX	1	-20.005311	78.279335	-0.256	0.7983	FEMALE
AGE	1	32.365139	39.352347	0.822	0.4109	AGE AT DEATH
AGE2	1	-0.314129	0.265439	-1.183	0.2367	AGE SQUARED
COLON	1	193.646	106.720	1.815	0.0697	COLON CANCER
LUNG	1	-198.220	108.359	-1.829	0.0674	LUNG CANCER
BREAST	1	138.445	204.924	0.676	0.4993	BREAST CANCER
PROSTATE	1	-159.447	123.675	-1.289	0.1974	PROSTATE CANCER
URINARY	1	-137.938	172.755	-0.798	0.4247	URINARY CANCER
LEUKEM	1	239.672	201.657	1.189	0.2347	LEUKEMIA
EXPO	1	0.241253	0.066830	3.610	0.0003	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	6.378736	103.684	0.062	0.9509	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-472.335	95.557804	-4.943	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-96.879780	98.726079	-0.981	0.3265	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-58.361395	129.250	-0.452	0.6516	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-175.399	165.014	-1.063	0.2879	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.037995	0.008820745	4.308	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.00942004	0.010948	0.860	0.3896	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.165888	0.100582	1.649	0.0992	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.091719	0.118493	0.774	0.4390	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	3808025	DF: 1	F VALUE:	0.7958
	DENOMINATOR:	4785326	DF: 3509	PROB >F :	0.3724
TEST: TEST2	NUMERATOR:	31906102	DF: 1	F VALUE:	6.6675
	DENOMINATOR:	4785326	DF: 3509	PROB >F :	0.0099
TEST: TEST3	NUMERATOR:	4070394	DF: 1	F VALUE:	0.8506
	DENOMINATOR:	4785326	DF: 3509	PROB >F :	0.3564

DEP VARIABLE: CTTP_R6 PTA-NEW TOTAL - REIMB - MONTH 6

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1374068073	62457640	11.689	0.0001
ERROR	3509	18749689077	5343314		
C TOTAL	3531	20123757150			

ROOT MSE	2311.561	R-SQUARE	0.0683
DEP MEAN	1235.715	ADJ R-SQ	0.0624
C.V.	187.0626		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	3395.399	1544.856	2.198	0.0280	INTERCEPT
HOSPICE	1	103.223	649.539	0.159	0.8737	HOSPICE BENEFIT PATIENT
FY86	1	-115.108	79.591253	-1.446	0.1482	DIED IN FY86
HOSP86	1	964.328	830.874	1.161	0.2459	HOSPICE*FY86
SEX	1	76.172965	82.717366	0.921	0.3572	FEMALE
AGE	1	-18.589915	41.583420	-0.447	0.6549	AGE AT DEATH
AGE2	1	-0.0034675	0.280488	-0.012	0.9901	AGE SQUARED
COLON	1	192.216	112.771	1.704	0.0884	COLON CANCER
LUNG	1	-66.674230	114.502	-0.582	0.5604	LUNG CANCER
BREAST	1	-189.677	216.542	-0.876	0.3811	BREAST CANCER
PROSTATE	1	-193.746	130.687	-1.483	0.1383	PROSTATE CANCER
URINARY	1	-3.885086	182.549	-0.021	0.9830	URINARY CANCER
LEUKEM	1	108.607	213.090	0.510	0.6103	LEUKEMIA
EXPO	1	0.188536	0.070618	2.670	0.0076	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	43.483504	109.562	0.397	0.6915	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-1182.416	100.975	-11.710	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-666.622	104.323	-6.390	0.0001	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-172.693	136.577	-1.264	0.2062	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-33.004105	174.369	-0.189	0.8499	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.046137	0.009320835	4.950	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.017491	0.011569	1.512	0.1306	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.221387	0.106284	2.083	0.0373	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.010650	0.125210	-0.085	0.9322	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	271341	DF: 1	F VALUE:	0.0508
	DENOMINATOR:	5343314	DF: 3509	PROB >F :	0.8217
TEST: TEST2	NUMERATOR:	23613534	DF: 1	F VALUE:	4.4193
	DENOMINATOR:	5343314	DF: 3509	PROB >F :	0.0356
TEST: TEST3	NUMERATOR:	5625040	DF: 1	F VALUE:	1.0527
	DENOMINATOR:	5343314	DF: 3509	PROB >F :	0.3050

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1779482225	80885556	6.864	0.0001
ERROR	3168	37331264446	11783859		
C TOTAL	3190	39110746671			

ROOT MSE	3432.763	R-SQUARE	0.0455
DEP MEAN	3327.227	ADJ R-SQ	0.0389
C.V.	103.1719		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	4549.394	2381.275	1.910	0.0562	INTERCEPT
HOSPICE	1	-2454.229	844.287	-2.907	0.0037	HOSPICE BENEFIT PATIENT
FY86	1	-82.427022	124.860	-0.660	0.5092	DIED IN FY86
HOSP86	1	-100.728	1046.883	-0.096	0.9234	HOSPICE*FY86
SEX	1	-123.800	129.433	-0.956	0.3389	FEMALE
AGE	1	6.082372	64.011544	0.095	0.9243	AGE AT DEATH
AGE2	1	-0.278378	0.431465	-0.645	0.5188	AGE SQUARED
COLON	1	-482.585	176.126	-2.740	0.0062	COLON CANCER
LUNG	1	-156.398	181.171	-0.863	0.3881	LUNG CANCER
BREAST	1	-1125.885	341.441	-3.297	0.0010	BREAST CANCER
PROSTATE	1	-451.409	203.508	-2.218	0.0266	PROSTATE CANCER
URINARY	1	224.520	282.073	0.796	0.4261	URINARY CANCER
LEUKEM	1	750.475	330.847	2.268	0.0234	LEUKEMIA
EXPO	1	0.414190	0.110640	3.744	0.0002	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	264.563	171.506	1.543	0.1230	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-294.351	161.981	-1.817	0.0693	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-195.286	160.684	-1.215	0.2243	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-287.978	202.952	-1.419	0.1560	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	336.320	256.778	1.310	0.1904	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.029869	0.013954	2.140	0.0324	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.048569	0.017167	2.829	0.0047	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.035334	0.156510	-0.226	0.8214	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.182520	0.182699	0.999	0.3179	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	78103925	DF: 1	F VALUE:	6.6280
	DENOMINATOR:	11783859	DF: 3168	PROB >F :	0.0101
TEST: TEST2	NUMERATOR:	1.5E+08	DF: 1	F VALUE:	12.8882
	DENOMINATOR:	11783859	DF: 3168	PROB >F :	0.0003
TEST: TEST3	NUMERATOR:	365806	DF: 1	F VALUE:	0.0310
	DENOMINATOR:	11783859	DF: 3168	PROB >F :	0.8602

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	482514732	21932488	3.368	0.0001
ERROR	3168	20629988898	6511991		
C TOTAL	3190	21112503631			

ROOT MSE	2551.860	R-SQUARE	0.0229
DEP MEAN	1548.041	ADJ R-SQ	0.0161
C.V.	164.8445		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2640.219	1770.202	1.491	0.1359	INTERCEPT
HOSPICE	1	-418.097	627.629	-0.666	0.5054	HOSPICE BENEFIT PATIENT
FY86	1	-186.316	92.818604	-2.007	0.0448	DIED IN FY86
HOSP86	1	538.487	778.236	0.692	0.4890	HOSPICE*FY86
SEX	1	89.381247	96.218085	0.929	0.3530	FEMALE
AGE	1	-14.905742	47.585151	-0.313	0.7541	AGE AT DEATH
AGE2	1	-0.00191538	0.320744	-0.006	0.9952	AGE SQUARED
COLON	1	-31.381249	130.929	-0.240	0.8106	COLON CANCER
LUNG	1	-187.144	134.680	-1.390	0.1648	LUNG CANCER
BREAST	1	-314.299	253.822	-1.238	0.2157	BREAST CANCER
PROSTATE	1	-331.281	151.284	-2.190	0.0286	PROSTATE CANCER
URINARY	1	88.601610	209.689	0.423	0.6727	URINARY CANCER
LEUKEM	1	406.609	245.946	1.653	0.0984	LEUKEMIA
EXPO	1	0.160543	0.082248	1.952	0.0510	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	87.094830	127.495	0.683	0.4946	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-256.903	120.414	-2.133	0.0330	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-109.770	119.450	-0.919	0.3582	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	55.096956	150.871	0.365	0.7150	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	21.301436	190.885	0.112	0.9112	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.044423	0.010374	4.282	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.027930	0.012761	2.189	0.0287	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.014612	0.116347	-0.126	0.9001	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.120719	0.135816	0.889	0.3742	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	1784757	DF: 1	F VALUE:	0.2741
	DENOMINATOR:	6511991	DF: 3168	PROB >F :	0.6006
TEST: TEST2	NUMERATOR:	1246330	DF: 1	F VALUE:	0.1914
	DENOMINATOR:	6511991	DF: 3168	PROB >F :	0.6618
TEST: TEST3	NUMERATOR:	1352447	DF: 1	F VALUE:	0.2077
	DENOMINATOR:	6511991	DF: 3168	PROB >F :	0.6486

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	345475704	15703441	3.344	0.0001
ERROR	3168	14875541059	4695562		
C TOTAL	3190	15221016763			

ROOT MSE	2166.925	R-SQUARE	0.0227
DEP MEAN	1154.778	ADJ R-SQ	0.0159
C.V.	187.6486		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2720.899	1503.175	1.810	0.0704	INTERCEPT
HOSPICE	1	191.643	532.954	0.360	0.7192	HOSPICE BENEFIT PATIENT
FY86	1	-80.382470	78.817367	-1.020	0.3079	DIED IN FY86
HOSP86	1	606.550	660.843	0.918	0.3588	HOSPICE*FY86
SEX	1	72.770053	81.704053	0.891	0.3732	FEMALE
AGE	1	-27.708451	40.407161	-0.686	0.4929	AGE AT DEATH
AGE2	1	0.061196	0.272361	0.225	0.8222	AGE SQUARED
COLON	1	-3.770218	111.179	-0.034	0.9730	COLON CANCER
LUNG	1	-189.002	114.364	-1.653	0.0985	LUNG CANCER
BREAST	1	-166.206	215.534	-0.771	0.4407	BREAST CANCER
PROSTATE	1	-34.899835	128.464	-0.272	0.7859	PROSTATE CANCER
URINARY	1	158.464	178.058	0.890	0.3736	URINARY CANCER
LEUKEM	1	76.581100	208.846	0.367	0.7139	LEUKEMIA
EXPO	1	0.219856	0.069841	3.148	0.0017	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-69.307073	108.263	-0.640	0.5221	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-117.153	102.250	-1.146	0.2520	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	49.417713	101.432	0.487	0.6261	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	122.702	128.113	0.958	0.3383	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	42.504800	162.090	0.262	0.7932	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.023209	0.008808727	2.635	0.0085	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.020671	0.010836	1.908	0.0565	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.037578	0.098797	-0.380	0.7037	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.153984	0.115328	1.335	0.1819	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	243795	DF: 1	F VALUE:	0.0519
	DENOMINATOR:	4695562	DF: 3168	PROB >F :	0.8198
TEST: TEST2	NUMERATOR:	15380746	DF: 1	F VALUE:	3.2756
	DENOMINATOR:	4695562	DF: 3168	PROB >F :	0.0704
TEST: TEST3	NUMERATOR:	3018973	DF: 1	F VALUE:	0.6429
	DENOMINATOR:	4695562	DF: 3168	PROB >F :	0.4227

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	410304730	18650215	4.482	0.0001
ERROR	3168	13183304758	4161397		
C TOTAL	3190	13593609488			

ROOT MSE	2039.950	R-SQUARE	0.0302
DEP MEAN	1019.524	ADJ R-SQ	0.0234
C.V.	200.0886		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	3462.830	1415.094	2.447	0.0145	INTERCEPT
HOSPICE	1	394.912	501.725	0.787	0.4313	HOSPICE BENEFIT PATIENT
FY86	1	-94.641806	74.198937	-1.276	0.2022	DIED IN FY86
HOSP86	1	392.545	622.120	0.631	0.5281	HOSPICE*FY86
SEX	1	21.352418	76.916472	0.278	0.7813	FEMALE
AGE	1	-49.913349	38.039439	-1.312	0.1896	AGE AT DEATH
AGE2	1	0.187393	0.256402	0.731	0.4649	AGE SQUARED
COLON	1	130.730	104.664	1.249	0.2117	COLON CANCER
LUNG	1	-63.651166	107.662	-0.591	0.5544	LUNG CANCER
BREAST	1	-244.344	202.904	-1.204	0.2286	BREAST CANCER
PROSTATE	1	75.601732	120.936	0.625	0.5319	PROSTATE CANCER
URINARY	1	93.504181	167.625	0.558	0.5770	URINARY CANCER
LEUKEM	1	-178.761	196.609	-0.909	0.3633	LEUKEMIA
EXPO	1	0.055396	0.065749	0.843	0.3996	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	24.054682	101.919	0.236	0.8134	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-163.176	96.258458	-1.695	0.0901	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	281.519	95.488161	2.948	0.0032	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-112.467	120.606	-0.933	0.3511	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	44.094281	152.593	0.289	0.7726	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.045657	0.008292566	5.506	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.001919069	0.010201	0.188	0.8508	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.073729	0.093008	0.793	0.4280	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.072336	0.108571	0.666	0.5053	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	2859415	DF: 1	F VALUE:	0.6871
	DENOMINATOR:	4161397	DF: 3168	PROB >F :	0.4072
TEST: TEST2	NUMERATOR:	19065509	DF: 1	F VALUE:	4.5815
	DENOMINATOR:	4161397	DF: 3168	PROB >F :	0.0324
TEST: TEST3	NUMERATOR:	967745	DF: 1	F VALUE:	0.2326
	DENOMINATOR:	4161397	DF: 3168	PROB >F :	0.6297

DEP VARIABLE: CTTP_R5 PTA-NEW TOTAL - REIMB - MONTH 5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	458559662	20843621	4.885	0.0001
ERROR	3168	13518729555	4267276		
C TOTAL	3190	13977289216			

ROOT MSE	2065.739	R-SQUARE	0.0328
DEP MEAN	901.916	ADJ R-SQ	0.0261
C.V.	229.0389		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-311.889	1432.983	-0.218	0.8277	INTERCEPT
HOSPICE	1	550.304	508.068	1.083	0.2788	HOSPICE BENEFIT PATIENT
FY86	1	7.767280	75.136935	0.103	0.9177	DIED IN FY86
HOSP86	1	156.604	629.984	0.249	0.8037	HOSPICE*FY86
SEX	1	-8.334771	77.888825	-0.107	0.9148	FEMALE
AGE	1	42.424513	38.520321	1.101	0.2708	AGE AT DEATH
AGE2	1	-0.385402	0.259643	-1.484	0.1378	AGE SQUARED
COLON	1	133.358	105.987	1.258	0.2084	COLON CANCER
LUNG	1	-191.504	109.024	-1.757	0.0791	LUNG CANCER
BREAST	1	-108.861	205.469	-0.530	0.5963	BREAST CANCER
PROSTATE	1	-123.741	122.465	-1.010	0.3124	PROSTATE CANCER
URINARY	1	-152.356	169.744	-0.898	0.3695	URINARY CANCER
LEUKEM	1	194.434	199.094	0.977	0.3288	LEUKEMIA
EXPO	1	0.202112	0.066580	3.036	0.0024	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	101.002	103.207	0.979	0.3278	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-190.595	97.475325	-1.955	0.0506	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	107.043	96.695291	1.107	0.2684	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-65.514370	122.131	-0.536	0.5917	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-9.411617	154.522	-0.061	0.9514	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.039641	0.008397398	4.721	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.008385021	0.010330	0.812	0.4170	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.216481	0.094183	2.299	0.0216	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.031690	0.109943	0.288	0.7732	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	6910143	DF: 1	F VALUE:	1.6193
	DENOMINATOR:	4267276	DF: 3168	PROB >F :	0.2033
TEST: TEST2	NUMERATOR:	18896650	DF: 1	F VALUE:	4.4283
	DENOMINATOR:	4267276	DF: 3168	PROB >F :	0.0354
TEST: TEST3	NUMERATOR:	294622	DF: 1	F VALUE:	0.0690
	DENOMINATOR:	4267276	DF: 3168	PROB >F :	0.7928

DEP VARIABLE: CTTP_R6 PTA-NEW TOTAL - REIMB - MONTH 6

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	526053036	23911502	5.787	0.0001
ERROR	3168	13088844099	4131580		
C TOTAL	3190	13614897135			

ROOT MSE	2032.629	R-SQUARE	0.0386
DEP MEAN	918.457	ADJ R-SQ	0.0320
C.V.	221.309		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	4056.037	1410.016	2.877	0.0040	INTERCEPT
HOSPICE	1	706.529	499.924	1.413	0.1577	HOSPICE BENEFIT PATIENT
FY86	1	-44.590359	73.932635	-0.603	0.5465	DIED IN FY86
HOSP86	1	142.372	619.887	0.230	0.8184	HOSPICE*FY86
SEX	1	24.343931	76.640417	0.318	0.7508	FEMALE
AGE	1	-62.433400	37.902914	-1.647	0.0996	AGE AT DEATH
AGE2	1	0.305920	0.255482	1.197	0.2312	AGE SQUARED
COLON	1	-9.632486	104.289	-0.092	0.9264	COLON CANCER
LUNG	1	-122.073	107.276	-1.138	0.2552	LUNG CANCER
BREAST	1	-231.156	202.176	-1.143	0.2530	BREAST CANCER
PROSTATE	1	-112.494	120.502	-0.934	0.3506	PROSTATE CANCER
URINARY	1	-16.030192	167.023	-0.096	0.9235	URINARY CANCER
LEUKEM	1	163.870	195.903	0.836	0.4029	LEUKEMIA
EXPO	1	0.201127	0.065513	3.070	0.0022	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-11.616198	101.553	-0.114	0.9089	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-550.133	95.912984	-5.736	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-329.029	95.145451	-3.458	0.0006	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-108.750	120.173	-0.905	0.3656	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	171.958	152.045	1.131	0.2582	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.051805	0.008262804	6.270	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.017127	0.010165	1.685	0.0921	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.204219	0.092674	2.204	0.0276	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.064358	0.108181	-0.595	0.5519	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	7866430	DF: 1	F VALUE:	1.9040
	DENOMINATOR:	4131580	DF: 3168	PROB >F :	0.1677
TEST: TEST2	NUMERATOR:	20295722	DF: 1	F VALUE:	4.9123
	DENOMINATOR:	4131580	DF: 3168	PROB >F :	0.0267
TEST: TEST3	NUMERATOR:	104261	DF: 1	F VALUE:	0.0252
	DENOMINATOR:	4131580	DF: 3168	PROB >F :	0.8738

DEP VARIABLE: CTTP_R7 PTA-NEW TOTAL - REIMB - MONTH 7

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	908636337	41301652	7.688	0.0001
ERROR	3168	17018727494	5372073		
C TOTAL	3190	17927363831			

ROOT MSE	2317.773	R-SQUARE	0.0507
DEP MEAN	1209.377	ADJ R-SQ	0.0441
C.V.	191.6503		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	3971.166	1607.818	2.470	0.0136	INTERCEPT
HOSPICE	1	411.026	570.056	0.721	0.4709	HOSPICE BENEFIT PATIENT
FY86	1	-206.312	84.304174	-2.447	0.0144	DIED IN FY86
HOSP86	1	306.666	706.847	0.434	0.6644	HOSPICE*FY86
SEX	1	182.498	87.391814	2.088	0.0369	FEMALE
AGE	1	-40.164777	43.220073	-0.929	0.3528	AGE AT DEATH
AGE2	1	0.110231	0.291322	0.378	0.7052	AGE SQUARED
COLON	1	200.478	118.919	1.686	0.0919	COLON CANCER
LUNG	1	-55.330819	122.325	-0.452	0.6511	LUNG CANCER
BREAST	1	-306.918	230.538	-1.331	0.1832	BREAST CANCER
PROSTATE	1	-30.068289	137.407	-0.219	0.8268	PROSTATE CANCER
URINARY	1	360.266	190.454	1.892	0.0586	URINARY CANCER
LEUKEM	1	384.017	223.385	1.719	0.0857	LEUKEMIA
EXPO	1	0.204060	0.074703	2.732	0.0063	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	68.848847	115.800	0.595	0.5522	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-629.817	109.368	-5.759	0.0001	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-616.848	108.493	-5.686	0.0001	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-394.914	137.032	-2.882	0.0040	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	265.881	173.374	1.534	0.1252	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.049512	0.00942194	5.255	0.0001	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.004463	0.011591	-0.385	0.7002	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.330458	0.105674	3.127	0.0018	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.076536	0.123357	-0.620	0.5350	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TEST: TEST1	NUMERATOR:	3751221	DF: 1	F VALUE:	0.6983
	DENOMINATOR:	5372073	DF: 3168	PROB >F :	0.4034
TEST: TEST2	NUMERATOR:	17910217	DF: 1	F VALUE:	3.3339
	DENOMINATOR:	5372073	DF: 3168	PROB >F :	0.0680
TEST: TEST3	NUMERATOR:	109819	DF: 1	F VALUE:	0.0204
	DENOMINATOR:	5372073	DF: 3168	PROB >F :	0.8863

TABLE 3.23

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	1157370099	52607732	5.976	0.0001
ERROR	8643	76087651323	8803384		
C TOTAL	8665	77245021422			

ROOT MSE	2967.050	R-SQUARE	0.0150
DEP MEAN	3286.518	ADJ R-SQ	0.0125
C.V.	90.27943		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2369.586	1623.594	1.459	0.1445	INTERCEPT
FY86	1	81.837083	72.065853	1.136	0.2562	DIED IN FY86
HHA	1	207.612	77.322003	2.685	0.0073	HHA-BASED HOSPICE
HOSP_SNF	1	577.343	86.199730	6.698	0.0001	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	103.151	67.515505	1.528	0.1266	FEMALE
AGE	1	32.463455	43.684224	0.743	0.4574	AGE AT DEATH
AGE2	1	-0.231278	0.294364	-0.786	0.4321	AGE SQUARED
COLON	1	-310.964	89.477790	-3.475	0.0005	COLON CANCER
LUNG	1	-355.080	92.175606	-3.852	0.0001	LUNG CANCER
BREAST	1	-261.796	152.756	-1.714	0.0866	BREAST CANCER
PROSTATE	1	-215.576	119.095	-1.810	0.0703	PROSTATE CANCER
URINARY	1	-67.249625	168.604	-0.399	0.6900	URINARY CANCER
LEUKEM	1	106.574	290.878	0.366	0.7141	LEUKEMIA
EXPO	1	-0.028291	0.039526	-0.716	0.4742	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-275.683	125.514	-2.196	0.0281	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-175.787	97.658381	-1.800	0.0719	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-251.268	102.114	-2.461	0.0139	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-94.943545	153.414	-0.619	0.5360	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	297.588	170.729	1.743	0.0814	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.035462	0.011151	3.180	0.0015	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.026247	0.011685	2.246	0.0247	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.218462	0.103683	2.107	0.0351	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.061497	0.116238	0.529	0.5968	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	228484001	10385636	2.824	0.0001
ERROR	2302	8466860299	3678045		
C TOTAL	2324	8695344301			

ROOT MSE	1917.823	R-SQUARE	0.0263
DEP MEAN	2679.768	ADJ R-SQ	0.0170
C.V.	71.56677		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	230.522	1878.456	0.123	0.9023	INTERCEPT
FY86	1	-6.447949	94.420024	-0.068	0.9456	DIED IN FY86
HHA	1	152.718	99.054106	1.542	0.1233	HHA-BASED HOSPICE
HOSP_SNF	1	407.184	106.332	3.829	0.0001	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	123.419	84.188296	1.466	0.1428	FEMALE
AGE	1	70.523058	50.800990	1.388	0.1652	AGE AT DEATH
AGE2	1	-0.530238	0.345083	-1.537	0.1245	AGE SQUARED
COLON	1	-200.706	114.895	-1.747	0.0808	COLON CANCER
LUNG	1	-144.940	114.581	-1.265	0.2060	LUNG CANCER
BREAST	1	-140.267	173.982	-0.806	0.4202	BREAST CANCER
PROSTATE	1	-170.690	152.413	-1.120	0.2629	PROSTATE CANCER
URINARY	1	386.041	212.742	1.815	0.0697	URINARY CANCER
LEUKEM	1	119.921	380.681	0.315	0.7528	LEUKEMIA
EXPO	1	-0.059927	0.046990	-1.275	0.2023	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	9.700759	155.430	0.062	0.9502	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	134.900	118.376	1.140	0.2546	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	22.278230	124.409	0.179	0.8579	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	32.923948	182.122	0.181	0.8566	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	212.386	202.016	1.051	0.2932	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.015252	0.012714	1.200	0.2304	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.004910706	0.012788	0.384	0.7010	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.074262	0.130225	0.570	0.5686	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.145104	0.147133	0.986	0.3241	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	763629141	34710415	4.589	0.0001
ERROR	2302	17412027426	7563869		
C TOTAL	2324	18175656566			

ROOT MSE	2750.249	R-SQUARE	0.0420
DEP MEAN	2804.136	ADJ R-SQ	0.0329
C.V.	98.07831		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-3274.844	2693.795	-1.216	0.2242	INTERCEPT
FY86	1	75.269745	135.403	0.556	0.5783	DIED IN FY86
HHA	1	310.472	142.048	2.186	0.0289	HHA-BASED HOSPICE
HOSP_SNF	1	687.332	152.485	4.508	0.0001	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	248.940	120.730	2.062	0.0393	FEMALE
AGE	1	163.441	72.851022	2.243	0.0250	AGE AT DEATH
AGE2	1	-1.192671	0.494865	-2.410	0.0160	AGE SQUARED
COLON	1	-39.239447	164.765	-0.238	0.8118	COLON CANCER
LUNG	1	-236.365	164.315	-1.438	0.1504	LUNG CANCER
BREAST	1	-581.831	249.499	-2.332	0.0198	BREAST CANCER
PROSTATE	1	-143.891	218.568	-0.658	0.5104	PROSTATE CANCER
URINARY	1	261.706	305.082	0.858	0.3911	URINARY CANCER
LEUKEM	1	1396.905	545.915	2.559	0.0106	LEUKEMIA
EXPO	1	-0.228536	0.067386	-3.391	0.0007	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	432.316	222.894	1.940	0.0526	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-132.795	169.757	-0.782	0.4341	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-239.839	178.409	-1.344	0.1790	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	488.540	261.172	1.871	0.0615	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	382.431	289.701	1.320	0.1869	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.025603	0.018232	1.404	0.1604	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.073331	0.018338	3.999	0.0001	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.176857	0.186749	-0.947	0.3437	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.403536	0.210996	-1.913	0.0559	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	93175075	4235231	1.703	0.0230
ERROR	883	2195945502	2486914		
C TOTAL	905	2289120577			

ROOT MSE	1576.995	R-SQUARE	0.0407
DEP MEAN	2553.276	ADJ R-SQ	0.0168
C.V.	61.7636		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	662.946	2301.316	0.288	0.7734	INTERCEPT
FY86	1	94.593495	127.080	0.744	0.4569	DIED IN FY86
HHA	1	302.358	133.516	2.265	0.0238	HHA-BASED HOSPICE
HOSP_SNF	1	264.003	135.717	1.945	0.0521	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	-14.651207	112.211	-0.131	0.8961	FEMALE
AGE	1	65.610195	62.484097	1.050	0.2940	AGE AT DEATH
AGE2	1	-0.491082	0.425606	-1.154	0.2489	AGE SQUARED
COLON	1	-367.839	147.087	-2.501	0.0126	COLON CANCER
LUNG	1	-148.438	149.814	-0.991	0.3220	LUNG CANCER
BREAST	1	210.474	231.136	0.911	0.3627	BREAST CANCER
PROSTATE	1	-301.564	188.563	-1.599	0.1101	PROSTATE CANCER
URINARY	1	96.577004	325.083	0.297	0.7665	URINARY CANCER
LEUKEM	1	1504.252	720.727	2.087	0.0372	LEUKEMIA
EXPO	1	0.032919	0.060967	0.540	0.5894	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-370.298	208.634	-1.775	0.0763	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-29.844305	154.315	-0.193	0.8467	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-129.326	158.233	-0.817	0.4140	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	107.772	203.509	0.530	0.5965	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-136.411	248.681	-0.549	0.5835	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	-0.00357623	0.018796	-0.190	0.8491	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.024859	0.018125	1.372	0.1705	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.011825	0.101354	-0.117	0.9071	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.150487	0.132408	1.137	0.2560	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	72819654	3309984	2.247	0.0009
ERROR	883	1300700486	1473047		
C TOTAL	905	1373520140			

ROOT MSE	1213.691	R-SQUARE	0.0530
DEP MEAN	2212.688	ADJ R-SQ	0.0294
C.V.	54.85144		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	4947.954	1771.145	2.794	0.0053	INTERCEPT
FY86	1	113.281	97.803847	1.158	0.2471	DIED IN FY86
HHA	1	171.315	102.757	1.667	0.0958	HHA-BASED HOSPICE
HOSP_SNF	1	374.378	104.451	3.584	0.0004	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	-58.924001	86.359777	-0.682	0.4952	FEMALE
AGE	1	-59.899554	48.089180	-1.246	0.2132	AGE AT DEATH
AGE2	1	0.333798	0.327556	1.019	0.3085	AGE SQUARED
COLON	1	-86.275288	113.201	-0.762	0.4462	COLON CANCER
LUNG	1	-100.896	115.301	-0.875	0.3818	LUNG CANCER
BREAST	1	286.568	177.887	1.611	0.1075	BREAST CANCER
PROSTATE	1	-80.954060	145.122	-0.558	0.5771	PROSTATE CANCER
URINARY	1	471.345	250.191	1.884	0.0599	URINARY CANCER
LEUKEM	1	306.786	554.688	0.553	0.5803	LEUKEMIA
EXPO	1	0.012222	0.046922	0.260	0.7946	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-349.547	160.569	-2.177	0.0298	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	112.883	118.765	0.950	0.3421	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-206.513	121.780	-1.696	0.0903	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	25.197212	156.625	0.161	0.8722	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-197.934	191.390	-1.034	0.3013	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	-0.013968	0.014466	-0.966	0.3345	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.011739	0.013949	0.842	0.4002	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.040316	0.078004	0.517	0.6054	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.227945	0.101904	2.237	0.0255	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	103889667	4722258	0.769	0.7667
ERROR	883	5424532122	6143298		
C TOTAL	905	5528421789			

ROOT MSE	2478.568	R-SQUARE	0.0188
DEP MEAN	2593.877	ADJ R-SQ	-0.0057
C.V.	95.55455		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-692.746	3616.984	-0.192	0.8482	INTERCEPT
FY86	1	-40.093688	199.732	-0.201	0.8410	DIED IN FY86
HHA	1	127.266	209.848	0.606	0.5444	HHA-BASED HOSPICE
HOSP_SNF	1	52.681848	213.307	0.247	0.8050	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	164.210	176.362	0.931	0.3521	FEMALE
AGE	1	96.524140	98.206416	0.983	0.3259	AGE AT DEATH
AGE2	1	-0.677423	0.668925	-1.013	0.3115	AGE SQUARED
COLON	1	-196.092	231.176	-0.848	0.3965	COLON CANCER
LUNG	1	-7.600538	235.464	-0.032	0.9743	LUNG CANCER
BREAST	1	286.086	363.277	0.788	0.4312	BREAST CANCER
PROSTATE	1	24.211436	296.365	0.082	0.9349	PROSTATE CANCER
URINARY	1	1266.813	510.934	2.479	0.0133	URINARY CANCER
LEUKEM	1	775.492	1132.768	0.685	0.4938	LEUKEMIA
EXPO	1	-0.00544794	0.095822	-0.057	0.9547	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-220.317	327.910	-0.672	0.5018	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-92.943295	242.538	-0.383	0.7017	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-320.599	248.696	-1.289	0.1977	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	124.420	319.855	0.389	0.6974	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-39.398528	390.852	-0.101	0.9197	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.014959	0.029542	0.506	0.6127	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.047130	0.028486	1.654	0.0984	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.031556	0.159298	-0.198	0.8430	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.00728308	0.208106	-0.035	0.9721	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	86084244	4099250	1.515	0.0880
ERROR	104	281399328	2705763		
C TOTAL	125	367483572			

ROOT MSE	1644.920	R-SQUARE	0.2343
DEP MEAN	2847.348	ADJ R-SQ	0.0796
C.V.	57.77027		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LEUKEM =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	1299.833	10161.023	0.128	0.8985	INTERCEPT
FY86	1	692.711	334.155	2.073	0.0406	DIED IN FY86
HHA	1	1375.526	606.363	2.268	0.0254	HHA-BASED HOSPICE
HOSP_SNF	1	1164.267	582.565	1.999	0.0483	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	418.650	329.525	1.270	0.2068	FEMALE
AGE	1	8.151476	271.177	0.030	0.9761	AGE AT DEATH
AGE2	1	-0.032740	1.805320	-0.018	0.9856	AGE SQUARED
COLON	1	-5.865991	424.159	-0.014	0.9890	COLON CANCER
LUNG	1	-775.667	431.870	-1.796	0.0754	LUNG CANCER
BREAST	1	-1334.413	867.873	-1.538	0.1272	BREAST CANCER
PROSTATE	1	-507.803	514.196	-0.988	0.3257	PROSTATE CANCER
URINARY	1	-977.662	1025.847	-0.953	0.3428	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	-0.205216	0.194114	-1.057	0.2929	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-266.309	479.255	-0.556	0.5796	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	144.597	490.573	0.295	0.7688	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-108.519	483.491	-0.224	0.8228	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	105.163	647.609	0.162	0.8713	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-2133.560	888.538	-2.401	0.0181	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.022378	0.049796	0.449	0.6541	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.102059	0.047086	2.167	0.0325	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.051968	0.456176	0.114	0.9095	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.347654	0.488183	0.712	0.4780	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	57462158	2736293	1.510	0.0898
ERROR	104	188509853	1812595		
C TOTAL	125	245972011			

ROOT MSE	1346.326	R-SQUARE	0.2336
DEP MEAN	2390.411	ADJ R-SQ	0.0789
C.V.	56.32196		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	10394.175	8316.545	1.250	0.2142	INTERCEPT
FY86	1	721.328	273.497	2.637	0.0096	DIED IN FY86
HHA	1	800.555	496.293	1.613	0.1098	HHA-BASED HOSPICE
HOSP_SNF	1	596.826	476.815	1.252	0.2135	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	214.196	269.708	0.794	0.4289	FEMALE
AGE	1	-220.344	221.952	-0.993	0.3231	AGE AT DEATH
AGE2	1	1.347704	1.477610	0.912	0.3638	AGE SQUARED
COLON	1	-525.619	347.163	-1.514	0.1330	COLON CANCER
LUNG	1	-805.567	353.475	-2.279	0.0247	LUNG CANCER
BREAST	1	-1166.501	710.333	-1.642	0.1036	BREAST CANCER
PROSTATE	1	-145.497	420.857	-0.346	0.7303	PROSTATE CANCER
URINARY	1	-713.669	839.630	-0.850	0.3973	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.062428	0.158877	0.393	0.6952	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-34.472983	392.258	-0.088	0.9301	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	32.002232	401.521	0.080	0.9366	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-341.025	395.725	-0.862	0.3908	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	242.530	530.052	0.458	0.6482	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-730.150	727.247	-1.004	0.3177	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.014006	0.040757	0.344	0.7318	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.088074	0.038539	2.285	0.0243	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.206978	0.373368	-0.554	0.5805	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.266936	0.399566	0.668	0.5056	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	39736489	1892214	0.929	0.5562
ERROR	104	211913467	2037629		
C TOTAL	125	251649956			

ROOT MSE	1427.456	R-SQUARE	0.1579
DEP MEAN	2319.156	ADJ R-SQ	-0.0121
C.V.	61.55064		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	18077.012	8817.697	2.050	0.0429	INTERCEPT
FY86	1	378.050	289.978	1.304	0.1952	DIED IN FY86
HHA	1	540.934	526.200	1.028	0.3063	HHA-BASED HOSPICE
HOSP_SNF	1	526.204	505.548	1.041	0.3004	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	-10.651903	285.961	-0.037	0.9704	FEMALE
AGE	1	-427.262	235.326	-1.816	0.0723	AGE AT DEATH
AGE2	1	2.778821	1.566650	1.774	0.0790	AGE SQUARED
COLON	1	-518.266	368.083	-1.408	0.1621	COLON CANCER
LUNG	1	-595.609	374.775	-1.589	0.1150	LUNG CANCER
BREAST	1	-1065.018	753.137	-1.414	0.1603	BREAST CANCER
PROSTATE	1	38.111321	446.217	0.085	0.9321	PROSTATE CANCER
URINARY	1	-799.381	890.226	-0.898	0.3713	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	-0.017310	0.168451	-0.103	0.9184	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	102.309	415.896	0.246	0.8062	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-104.438	425.717	-0.245	0.8067	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-341.735	419.572	-0.814	0.4172	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	336.410	561.993	0.599	0.5507	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-716.885	771.070	-0.930	0.3547	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.012723	0.043213	0.294	0.7690	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.073493	0.040861	1.799	0.0750	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.148918	0.395867	-0.376	0.7075	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.443892	0.423643	1.048	0.2972	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	97346236	4635535	0.836	0.6713
ERROR	104	576968695	5547776		
C TOTAL	125	674314931			

ROOT MSE	2355.372	R-SQUARE	0.1444
DEP MEAN	2349.957	ADJ R-SQ	-0.0284
C.V.	100.2304		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-931.390	14549.633	-0.064	0.9491	INTERCEPT
FY86	1	509.395	478.478	1.065	0.2895	DIED IN FY86
HHA	1	426.682	868.256	0.491	0.6242	HHA-BASED HOSPICE
HOSP_SNF	1	-144.962	834.179	-0.174	0.8624	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	1041.109	471.849	2.206	0.0296	FEMALE
AGE	1	105.365	388.300	0.271	0.7867	AGE AT DEATH
AGE2	1	-0.732483	2.585049	-0.283	0.7775	AGE SQUARED
COLON	1	-707.156	607.356	-1.164	0.2470	COLON CANCER
LUNG	1	374.060	618.398	0.605	0.5466	LUNG CANCER
BREAST	1	-1416.627	1242.713	-1.140	0.2569	BREAST CANCER
PROSTATE	1	109.391	736.280	0.149	0.8822	PROSTATE CANCER
URINARY	1	-1459.236	1468.917	-0.993	0.3228	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.030542	0.277953	0.110	0.9127	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-1119.855	686.248	-1.632	0.1057	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	720.619	702.454	1.026	0.3073	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-1045.710	692.314	-1.510	0.1340	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	14.167893	927.315	0.015	0.9878	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-139.265	1272.304	-0.109	0.9130	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	-0.089172	0.071304	-1.251	0.2139	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.046687	0.067423	0.692	0.4902	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.334961	0.653201	-0.513	0.6092	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.171515	0.699032	0.245	0.8067	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	90767955	4125816	1.549	0.0970
ERROR	54	143838252	2663671		
C TOTAL	76	234606207			

ROOT MSE	1632.076	R-SQUARE	0.3869
DEP MEAN	2806.255	ADJ R-SQ	0.1371
C.V.	58.1585		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	14352.685	13938.927	1.030	0.3077	INTERCEPT
FY86	1	967.460	522.770	1.851	0.0697	DIED IN FY86
HHA	1	400.336	644.387	0.621	0.5370	HHA-BASED HOSPICE
HOSP_SNF	1	1389.324	736.565	1.886	0.0646	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	880.856	463.041	1.902	0.0625	FEMALE
AGE	1	-372.484	380.149	-0.980	0.3315	AGE AT DEATH
AGE2	1	2.473168	2.582021	0.958	0.3424	AGE SQUARED
COLON	1	-474.630	628.219	-0.756	0.4532	COLON CANCER
LUNG	1	-15.383744	673.640	-0.023	0.9819	LUNG CANCER
BREAST	1	-1519.314	885.569	-1.716	0.0920	BREAST CANCER
PROSTATE	1	-111.132	860.285	-0.129	0.8977	PROSTATE CANCER
URINARY	1	61.043790	795.829	0.077	0.9391	URINARY CANCER
LEUKEM	1	2949.937	1973.108	1.495	0.1407	LEUKEMIA
EXPO	1	-0.521625	0.221769	-2.352	0.0223	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	1929.513	788.663	2.447	0.0177	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-249.332	550.107	-0.453	0.6522	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-1301.208	587.178	-2.216	0.0309	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	892.884	960.914	0.929	0.3569	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-1079.266	1206.310	-0.895	0.3749	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.025703	0.060694	0.423	0.6736	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.064634	0.080718	0.801	0.4268	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.623599	0.523672	-1.191	0.2389	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.305533	0.783902	0.390	0.6982	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	19621324	891878	0.843	0.6619
ERROR	54	57128991	1057944		
C TOTAL	76	76750314			

ROOT MSE	1028.564	R-SQUARE	0.2557
DEP MEAN	2076.955	ADJ R-SQ	-0.0476
C.V.	49.52269		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	11452.080	8784.569	1.304	0.1979	INTERCEPT
FY86	1	800.606	329.459	2.430	0.0185	DIED IN FY86
HHA	1	300.940	406.104	0.741	0.4619	HHA-BASED HOSPICE
HOSP_SNF	1	1007.000	464.197	2.169	0.0345	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	435.113	291.817	1.491	0.1418	FEMALE
AGE	1	-271.349	239.577	-1.133	0.2624	AGE AT DEATH
AGE2	1	1.679981	1.627237	1.032	0.3065	AGE SQUARED
COLON	1	-453.672	395.915	-1.146	0.2569	COLON CANCER
LUNG	1	53.527289	424.540	0.126	0.9001	LUNG CANCER
BREAST	1	-775.093	558.102	-1.389	0.1706	BREAST CANCER
PROSTATE	1	-440.555	542.168	-0.813	0.4200	PROSTATE CANCER
URINARY	1	63.816038	501.546	0.127	0.8992	URINARY CANCER
LEUKEM	1	-654.436	1243.489	-0.526	0.6008	LEUKEMIA
EXPO	1	-0.220945	0.139763	-1.581	0.1198	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	737.675	497.030	1.484	0.1436	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	385.471	346.688	1.112	0.2711	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-428.492	370.050	-1.158	0.2520	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	318.034	605.586	0.525	0.6016	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-224.833	760.239	-0.296	0.7686	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	-0.024293	0.038250	-0.635	0.5280	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.004203919	0.050870	0.083	0.9344	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.515028	0.330028	-1.561	0.1245	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.251148	0.494030	0.508	0.6133	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	25195985	1145272	1.631	0.0735
ERROR	54	37915920	702147		
C TOTAL	76	63111906			

ROOT MSE	837.942	R-SQUARE	0.3992
DEP MEAN	2048.021	ADJ R-SQ	0.1545
C.V.	40.91472		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-5560.460	7156.538	-0.777	0.4406	INTERCEPT
FY86	1	730.572	268.401	2.722	0.0087	DIED IN FY86
HHA	1	263.339	330.842	0.796	0.4295	HHA-BASED HOSPICE
HOSP_SNF	1	1034.237	378.168	2.735	0.0084	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	344.578	237.735	1.449	0.1530	FEMALE
AGE	1	162.428	195.177	0.832	0.4090	AGE AT DEATH
AGE2	1	-1.173560	1.325664	-0.885	0.3799	AGE SQUARED
COLON	1	-114.569	322.541	-0.355	0.7238	COLON CANCER
LUNG	1	66.874813	345.861	0.193	0.8474	LUNG CANCER
BREAST	1	-170.582	454.669	-0.375	0.7090	BREAST CANCER
PROSTATE	1	-274.196	441.689	-0.621	0.5373	PROSTATE CANCER
URINARY	1	-159.904	408.595	-0.391	0.6971	URINARY CANCER
LEUKEM	1	152.503	1013.035	0.151	0.8809	LEUKEMIA
EXPO	1	-0.209360	0.113861	-1.839	0.0715	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	1167.141	404.916	2.882	0.0057	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-137.594	282.437	-0.487	0.6281	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-264.095	301.470	-0.876	0.3849	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	1033.536	493.354	2.095	0.0409	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-620.840	619.345	-1.002	0.3206	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.057251	0.031162	1.837	0.0717	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.004337464	0.041442	0.105	0.9170	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.443761	0.268864	-1.651	0.1046	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.271424	0.402472	0.674	0.5029	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	31761699	1443714	0.959	0.5258
ERROR	54	81272697	1505050		
C TOTAL	76	113034396			

ROOT MSE	1226.805	R-SQUARE	0.2810
DEP MEAN	2134.383	ADJ R-SQ	-0.0119
C.V.	57.47818		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	13508.562	10477.665	1.289	0.2028	INTERCEPT
FY86	1	511.601	392.958	1.302	0.1985	DIED IN FY86
HHA	1	-679.374	484.375	-1.403	0.1665	HHA-BASED HOSPICE
HOSP_SNF	1	-260.063	553.664	-0.470	0.6405	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	-28.068101	348.060	-0.081	0.9360	FEMALE
AGE	1	-296.730	285.752	-1.038	0.3037	AGE AT DEATH
AGE2	1	1.833398	1.940863	0.945	0.3491	AGE SQUARED
COLON	1	55.592557	472.222	0.118	0.9067	COLON CANCER
LUNG	1	-300.013	506.364	-0.592	0.5560	LUNG CANCER
BREAST	1	-190.576	665.668	-0.286	0.7757	BREAST CANCER
PROSTATE	1	-26.508438	646.662	-0.041	0.9675	PROSTATE CANCER
URINARY	1	-71.750126	598.212	-0.120	0.9050	URINARY CANCER
LEUKEM	1	-534.249	1483.153	-0.360	0.7201	LEUKEMIA
EXPO	1	-0.061004	0.166700	-0.366	0.7158	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	278.871	592.825	0.470	0.6400	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-195.699	413.507	-0.473	0.6379	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	367.700	441.372	0.833	0.4085	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-190.641	722.304	-0.264	0.7928	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	44.122446	906.764	0.049	0.9614	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.058054	0.045623	1.272	0.2087	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.040818	0.060675	0.673	0.5040	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.454962	0.393636	1.156	0.2529	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.136776	0.589247	-0.232	0.8173	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R5 PTA-NEW TOTAL - REIMB - MONTH 5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	22	121760905	5534587	1.041	0.4358
ERROR	54	287158954	5317758		
C TOTAL	76	408919859			

ROOT MSE	2306.027	R-SQUARE	0.2978
DEP MEAN	2324.078	ADJ R-SQ	0.0117
C.V.	99.22328		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	14709.365	19694.880	0.747	0.4584	INTERCEPT
FY86	1	627.480	738.643	0.850	0.3994	DIED IN FY86
HHA	1	282.622	910.481	0.310	0.7574	HHA-BASED HOSPICE
HOSP_SNF	1	293.346	1040.722	0.282	0.7791	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	149.277	654.249	0.228	0.8204	FEMALE
AGE	1	-487.045	537.128	-0.907	0.3686	AGE AT DEATH
AGE2	1	3.752092	3.648242	1.028	0.3083	AGE SQUARED
COLON	1	-26.335067	887.636	-0.030	0.9764	COLON CANCER
LUNG	1	-345.271	951.813	-0.363	0.7182	LUNG CANCER
BREAST	1	1161.533	1251.256	0.928	0.3574	BREAST CANCER
PROSTATE	1	1735.904	1215.532	1.428	0.1590	PROSTATE CANCER
URINARY	1	531.169	1124.460	0.472	0.6386	URINARY CANCER
LEUKEM	1	-1503.993	2787.885	-0.539	0.5918	LEUKEMIA
EXPO	1	0.406455	0.313347	1.297	0.2001	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	1190.200	1114.334	1.068	0.2902	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-748.518	777.269	-0.963	0.3398	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	753.091	829.648	0.908	0.3681	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	679.706	1357.715	0.501	0.6187	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-1984.034	1704.445	-1.164	0.2495	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.089536	0.085757	1.044	0.3011	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.036405	0.114050	0.319	0.7508	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.063344	0.739918	-0.086	0.9321	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	1.033260	1.107608	0.933	0.3550	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	20	186836139	9341807	2.538	0.0504
ERROR	12	44177083	3681424		
C TOTAL	32	231013222			

ROOT MSE	1918.704	R-SQUARE	0.8088
DEP MEAN	3686.835	ADJ R-SQ	0.4900
C.V.	52.04202		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

URINARY =
LEUKEM =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-4770.263	12929.053	-0.369	0.7186	INTERCEPT
FY86	1	373.861	1130.454	0.331	0.7466	DIED IN FY86
HHA	1	-2960.230	1432.140	-2.067	0.0610	HHA-BASED HOSPICE
HOSP_SNF	1	-2086.725	1501.117	-1.390	0.1897	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	1328.297	1011.897	1.313	0.2138	FEMALE
AGE	1	312.280	363.163	0.860	0.4067	AGE AT DEATH
AGE2	1	-2.440779	2.639228	-0.925	0.3733	AGE SQUARED
COLON	1	630.963	1253.972	0.503	0.6240	COLON CANCER
LUNG	1	2072.975	1468.104	1.412	0.1834	LUNG CANCER
BREAST	1	-608.421	1665.858	-0.365	0.7213	BREAST CANCER
PROSTATE	1	2579.215	1365.584	1.889	0.0833	PROSTATE CANCER
URINARY	0	0	.	.	.	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	-0.410752	0.561927	-0.731	0.4788	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-1458.548	1366.847	-1.067	0.3069	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-566.878	1105.215	-0.513	0.6173	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-810.511	1517.871	-0.534	0.6031	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	789.336	1630.442	0.484	0.6370	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	6659.687	2755.885	2.417	0.0325	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.242802	0.114898	2.113	0.0562	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.034896	0.197525	-0.177	0.8627	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.111635	0.645698	-0.173	0.8656	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-3.790490	1.852939	-2.046	0.0634	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	20	64601743	3230087	4.371	0.0059
ERROR	12	8867239	738937		
C TOTAL	32	73468982			

ROOT MSE	859.614	R-SQUARE	0.8793
DEP MEAN	2625.031	ADJ R-SQ	0.6782
C.V.	32.74682		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-5386.865	5792.452	-0.930	0.3707	INTERCEPT
FY86	1	129.856	506.464	0.256	0.8020	DIED IN FY86
HHA	1	-211.758	641.625	-0.330	0.7471	HHA-BASED HOSPICE
HOSP_SNF	1	336.976	672.528	0.501	0.6254	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	1201.042	453.348	2.649	0.0212	FEMALE
AGE	1	173.317	162.704	1.065	0.3077	AGE AT DEATH
AGE2	1	-1.276060	1.182422	-1.079	0.3017	AGE SQUARED
COLON	1	29.717626	561.802	0.053	0.9587	COLON CANCER
LUNG	1	1727.497	657.737	2.626	0.0221	LUNG CANCER
BREAST	1	-966.047	746.335	-1.294	0.2199	BREAST CANCER
PROSTATE	1	1551.404	611.806	2.536	0.0261	PROSTATE CANCER
URINARY	0	0	.	.	.	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	-0.170289	0.251754	-0.676	0.5116	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	604.479	612.372	0.987	0.3431	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-221.331	495.156	-0.447	0.6628	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-175.549	680.034	-0.258	0.8007	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	1270.185	730.468	1.739	0.1076	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	4810.778	1234.687	3.896	0.0021	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.120945	0.051476	2.350	0.0367	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.000317866	0.088495	-0.004	0.9972	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-1.414862	0.289284	-4.891	0.0004	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.403713	0.830151	-0.486	0.6355	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	20	12930014	646501	2.404	0.0607
ERROR	12	3227033	268919		
C TOTAL	32	16157047			

ROOT MSE	518.574	R-SQUARE	0.8003
DEP MEAN	2063.328	ADJ R-SQ	0.4674
C.V.	25.13291		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-1666.583	3494.378	-0.477	0.6420	INTERCEPT
FY86	1	72.716376	305.532	0.238	0.8159	DIED IN FY86
HHA	1	-535.971	387.069	-1.385	0.1914	HHA-BASED HOSPICE
HOSP_SNF	1	-333.674	405.712	-0.822	0.4269	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	475.079	273.489	1.737	0.1079	FEMALE
AGE	1	108.952	98.153263	1.110	0.2887	AGE AT DEATH
AGE2	1	-0.794511	0.713313	-1.114	0.2872	AGE SQUARED
COLON	1	-83.027558	338.915	-0.245	0.8106	COLON CANCER
LUNG	1	-283.563	396.789	-0.715	0.4885	LUNG CANCER
BREAST	1	-77.377318	450.237	-0.172	0.8664	BREAST CANCER
PROSTATE	1	495.806	369.081	1.343	0.2040	PROSTATE CANCER
URINARY	0	0	.	.	.	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.211093	0.151874	1.390	0.1898	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-223.106	369.422	-0.604	0.5571	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	1.068500	298.710	0.004	0.9972	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	360.307	410.240	0.878	0.3970	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-168.395	440.665	-0.382	0.7090	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	349.466	744.842	0.469	0.6473	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.007819239	0.031054	0.252	0.8055	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.011811	0.053386	-0.221	0.8286	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.399513	0.174515	-2.289	0.0410	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.981858	0.500800	1.961	0.0736	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	20	12322525	616126	1.250	0.3527
ERROR	12	5913405	492784		
C TOTAL	32	18235930			

ROOT MSE	701.986	R-SQUARE	0.6757
DEP MEAN	2104.747	ADJ R-SQ	0.1353
C.V.	33.3525		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-1562.469	4730.282	-0.330	0.7469	INTERCEPT
FY86	1	-1236.084	413.593	-2.989	0.0113	DIED IN FY86
HHA	1	-744.081	523.969	-1.420	0.1810	HHA-BASED HOSPICE
HOSP_SNF	1	-339.568	549.206	-0.618	0.5479	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	431.723	370.217	1.166	0.2662	FEMALE
AGE	1	178.709	132.868	1.345	0.2035	AGE AT DEATH
AGE2	1	-1.617690	0.965600	-1.675	0.1197	AGE SQUARED
COLON	1	81.037745	458.784	0.177	0.8627	COLON CANCER
LUNG	1	841.304	537.127	1.566	0.1433	LUNG CANCER
BREAST	1	-961.399	609.478	-1.577	0.1407	BREAST CANCER
PROSTATE	1	1294.655	499.619	2.591	0.0236	PROSTATE CANCER
URINARY	0	0	.	.	.	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.078709	0.205589	0.383	0.7085	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-132.002	500.081	-0.264	0.7963	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	155.621	404.359	0.385	0.7071	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-697.696	555.335	-1.256	0.2329	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-176.372	596.521	-0.296	0.7725	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	18.557301	1008.280	0.018	0.9856	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.030797	0.042037	0.733	0.4779	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.103414	0.072268	1.431	0.1780	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.504113	0.236238	-2.134	0.0542	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.671781	0.677925	0.991	0.3413	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R5 PTA-NEW TOTAL - REIMB - MONTH 5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	20	27030913	1351546	0.954	0.5532
ERROR	12	17005384	1417115		
C TOTAL	32	44036296			

ROOT MSE	1190.427	R-SQUARE	0.6138
DEP MEAN	2296.348	ADJ R-SQ	-0.0298
C.V.	51.83998		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-766.125	8021.608	-0.096	0.9255	INTERCEPT
FY86	1	569.416	701.371	0.812	0.4327	DIED IN FY86
HHA	1	-561.430	888.547	-0.632	0.5393	HHA-BASED HOSPICE
HOSP_SNF	1	-247.251	931.342	-0.265	0.7951	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	-553.506	627.814	-0.882	0.3953	FEMALE
AGE	1	76.147663	225.318	0.338	0.7412	AGE AT DEATH
AGE2	1	-0.447410	1.637463	-0.273	0.7893	AGE SQUARED
COLON	1	209.224	778.005	0.269	0.7926	COLON CANCER
LUNG	1	-92.657970	910.859	-0.102	0.9207	LUNG CANCER
BREAST	1	61.523463	1033.553	0.060	0.9535	BREAST CANCER
PROSTATE	1	-459.264	847.253	-0.542	0.5977	PROSTATE CANCER
URINARY	0	0	.	.	.	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.067379	0.348638	0.193	0.8500	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	35.061442	848.037	0.041	0.9677	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	214.473	685.711	0.313	0.7598	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	1419.800	941.737	1.508	0.1575	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-1116.055	1011.579	-1.103	0.2915	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	1691.290	1709.841	0.989	0.3421	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.054035	0.071286	0.758	0.4631	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.189495	0.122551	-1.546	0.1480	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.313474	0.400612	-0.782	0.4491	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.384297	1.149624	0.334	0.7439	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R6 PTA-NEW TOTAL - REIMB - MONTH 6

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	20	105971852	5298593	1.666	0.1828
ERROR	12	38161700	3180142		
C TOTAL	32	144133552			

ROOT MSE	1783.295	R-SQUARE	0.7352
DEP MEAN	2434.940	ADJ R-SQ	0.2940
C.V.	73.23773		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-799.418	12016.612	-0.067	0.9481	INTERCEPT
FY86	1	753.764	1050.675	0.717	0.4869	DIED IN FY86
HHA	1	-367.238	1331.070	-0.276	0.7873	HHA-BASED HOSPICE
HOSP_SNF	1	1541.817	1395.179	1.105	0.2908	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	872.715	940.484	0.928	0.3717	FEMALE
AGE	1	-74.990051	337.534	-0.222	0.8279	AGE AT DEATH
AGE2	1	1.029110	2.452970	0.420	0.6822	AGE SQUARED
COLON	1	81.369050	1165.475	0.070	0.9455	COLON CANCER
LUNG	1	1593.332	1364.495	1.168	0.2656	LUNG CANCER
BREAST	1	983.138	1548.294	0.635	0.5374	BREAST CANCER
PROSTATE	1	-650.230	1269.210	-0.512	0.6177	PROSTATE CANCER
URINARY	0	0	.	.	.	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.010449	0.522271	0.020	0.9844	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	675.257	1270.385	0.532	0.6047	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	1640.645	1027.217	1.597	0.1362	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-818.028	1410.750	-0.580	0.5727	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	3392.648	1515.377	2.239	0.0449	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	91.595068	2561.394	0.036	0.9721	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	-0.184144	0.106789	-1.724	0.1103	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.170061	0.183586	0.926	0.3725	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.751664	0.600129	-1.253	0.2342	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.017885	1.722172	-0.010	0.9919	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R1 PTA-NEW TOTAL - REIMB - MONTH 1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	38039975	1811427	0.738	0.7597
ERROR	26	63837500	2455288		
C TOTAL	47	101877475			

ROOT MSE	1566.936	R-SQUARE	0.3734
DEP MEAN	1138.299	ADJ R-SQ	-0.1327
C.V.	137.6559		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.

LEUKEM =

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	2084.902	31418.025	0.066	0.9476	INTERCEPT
FY86	1	-300.983	600.558	-0.501	0.6205	DIED IN FY86
HHA	1	-1740.176	1500.055	-1.160	0.2566	HHA-BASED HOSPICE
HOSP_SNF	1	-1481.047	1142.503	-1.296	0.2063	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	186.712	559.703	0.334	0.7414	FEMALE
AGE	1	4.996559	803.715	0.006	0.9951	AGE AT DEATH
AGE2	1	0.143778	5.132606	0.028	0.9779	AGE SQUARED
COLON	1	95.610257	749.210	0.128	0.8994	COLON CANCER
LUNG	1	299.023	875.869	0.341	0.7355	LUNG CANCER
BREAST	1	371.428	1084.583	0.342	0.7348	BREAST CANCER
PROSTATE	1	243.520	942.252	0.258	0.7981	PROSTATE CANCER
URINARY	1	-139.325	2044.343	-0.068	0.9462	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.749524	0.551807	1.358	0.1860	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-1485.430	1300.003	-1.143	0.2636	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	390.367	841.440	0.464	0.6466	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-960.249	763.583	-1.258	0.2197	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-331.640	672.442	-0.493	0.6260	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-904.326	835.319	-1.083	0.2889	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.033035	0.067513	0.489	0.6287	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	0.043103	0.058917	0.732	0.4710	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.083883	0.301477	0.278	0.7830	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.426644	0.399348	1.068	0.2952	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R2 PTA-NEW TOTAL - REIMB - MONTH 2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	99673025	4746335	3.269	0.0024
ERROR	26	37748130	1451851		
C TOTAL	47	137421155			

ROOT MSE	1204.928	R-SQUARE	0.7253
DEP MEAN	1610.672	ADJ R-SQ	0.5034
C.V.	74.80901		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	20491.155	24159.540	0.848	0.4041	INTERCEPT
FY86	1	-391.538	461.811	-0.848	0.4043	DIED IN FY86
HHA	1	-2184.585	1153.498	-1.894	0.0694	HHA-BASED HOSPICE
HOSP_SNF	1	-861.742	878.552	-0.981	0.3357	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	544.050	430.395	1.264	0.2174	FEMALE
AGE	1	-477.516	618.034	-0.773	0.4467	AGE AT DEATH
AGE2	1	3.396992	3.946823	0.861	0.3973	AGE SQUARED
COLON	1	-1104.911	576.120	-1.918	0.0662	COLON CANCER
LUNG	1	-822.709	673.517	-1.222	0.2329	LUNG CANCER
BREAST	1	-348.951	834.012	-0.418	0.6791	BREAST CANCER
PROSTATE	1	-410.622	724.564	-0.567	0.5758	PROSTATE CANCER
URINARY	1	-613.166	1572.040	-0.390	0.6997	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.349031	0.424323	0.823	0.4182	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-1014.571	999.664	-1.015	0.3195	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	548.772	647.043	0.848	0.4041	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-391.063	587.173	-0.666	0.5113	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-404.117	517.088	-0.782	0.4416	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-1609.968	642.336	-2.506	0.0188	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.006786696	0.051916	0.131	0.8970	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.068204	0.045305	-1.505	0.1443	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	1.492652	0.231827	6.439	0.0001	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.202585	0.307087	0.660	0.5152	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R3 PTA-NEW TOTAL - REIMB - MONTH 3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	73124925	3482139	1.364	0.2245
ERROR	26	66390715	2553489		
C TOTAL	47	139515639			

ROOT MSE	1597.964	R-SQUARE	0.5241
DEP MEAN	1850.968	ADJ R-SQ	0.1398
C.V.	86.33128		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-3713.101	32040.155	-0.116	0.9086	INTERCEPT
FY86	1	93.837699	612.450	0.153	0.8794	DIED IN FY86
HHA	1	-4289.780	1529.759	-2.804	0.0094	HHA-BASED HOSPICE
HOSP_SNF	1	-2818.911	1165.127	-2.419	0.0228	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	822.143	570.786	1.440	0.1617	FEMALE
AGE	1	169.672	819.630	0.207	0.8376	AGE AT DEATH
AGE2	1	-0.622895	5.234240	-0.119	0.9062	AGE SQUARED
COLON	1	-1237.798	764.045	-1.620	0.1173	COLON CANCER
LUNG	1	-63.761456	893.212	-0.071	0.9436	LUNG CANCER
BREAST	1	807.195	1106.059	0.730	0.4720	BREAST CANCER
PROSTATE	1	326.874	960.910	0.340	0.7365	PROSTATE CANCER
URINARY	1	1540.873	2084.824	0.739	0.4665	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	-0.288782	0.562734	-0.513	0.6122	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-263.929	1325.746	-0.199	0.8437	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	-1056.907	858.102	-1.232	0.2291	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	665.069	778.704	0.854	0.4009	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-129.197	685.758	-0.188	0.8520	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	-1755.675	851.859	-2.061	0.0494	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.063410	0.068850	0.921	0.3655	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.078563	0.060083	-1.308	0.2025	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.678128	0.307447	2.206	0.0364	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.066962	0.407256	-0.164	0.8707	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R4 PTA-NEW TOTAL - REIMB - MONTH 4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	34235018	1630239	2.108	0.0363
ERROR	26	20109130	773428		
C TOTAL	47	54344148			

ROOT MSE	879.448	R-SQUARE	0.6300
DEP MEAN	1723.757	ADJ R-SQ	0.3311
C.V.	51.01924		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-1113.630	17633.462	-0.063	0.9501	INTERCEPT
FY86	1	-13.845127	337.065	-0.041	0.9675	DIED IN FY86
HHA	1	490.325	841.910	0.582	0.5653	HHA-BASED HOSPICE
HOSP_SNF	1	281.627	641.233	0.439	0.6641	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	501.971	314.135	1.598	0.1221	FEMALE
AGE	1	41.308753	451.088	0.092	0.9277	AGE AT DEATH
AGE2	1	-0.070389	2.880691	-0.024	0.9807	AGE SQUARED
COLON	1	-387.515	420.496	-0.922	0.3652	COLON CANCER
LUNG	1	-478.548	491.584	-0.973	0.3393	LUNG CANCER
BREAST	1	-1149.931	608.725	-1.889	0.0701	BREAST CANCER
PROSTATE	1	-215.093	528.842	-0.407	0.6875	PROSTATE CANCER
URINARY	1	2368.814	1147.394	2.065	0.0491	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.366347	0.309703	1.183	0.2476	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-881.197	729.631	-1.208	0.2380	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	786.008	472.261	1.664	0.1080	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	31.772641	428.564	0.074	0.9415	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-559.929	377.410	-1.484	0.1499	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	118.905	468.825	0.254	0.8018	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	-0.00919535	0.037892	-0.243	0.8102	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.023328	0.033067	-0.705	0.4868	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.581580	0.169205	3.437	0.0020	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.191386	0.224136	-0.854	0.4010	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R5 PTA-NEW TOTAL - REIMB - MONTH 5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	36135268	1720727	2.349	0.0201
ERROR	26	19043337	732436		
C TOTAL	47	55178605			

ROOT MSE	855.825	R-SQUARE	0.6549
DEP MEAN	1777.074	ADJ R-SQ	0.3761
C.V.	48.15921		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-747.964	17159.810	-0.044	0.9656	INTERCEPT
FY86	1	-27.276832	328.011	-0.083	0.9344	DIED IN FY86
HHA	1	117.682	819.296	0.144	0.8869	HHA-BASED HOSPICE
HOSP_SNF	1	449.370	624.009	0.720	0.4779	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	592.412	305.697	1.938	0.0636	FEMALE
AGE	1	29.649048	438.971	0.068	0.9467	AGE AT DEATH
AGE2	1	-0.050569	2.803312	-0.018	0.9857	AGE SQUARED
COLON	1	-437.021	409.201	-1.068	0.2953	COLON CANCER
LUNG	1	-306.412	478.379	-0.641	0.5274	LUNG CANCER
BREAST	1	-919.910	592.374	-1.553	0.1325	BREAST CANCER
PROSTATE	1	-289.887	514.636	-0.563	0.5781	PROSTATE CANCER
URINARY	1	2228.792	1116.574	1.996	0.0565	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.279916	0.301384	0.929	0.3616	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-539.421	710.032	-0.760	0.4543	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	816.527	459.575	1.777	0.0873	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-215.977	417.052	-0.518	0.6089	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-280.058	367.273	-0.763	0.4526	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	446.836	456.232	0.979	0.3364	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.003542374	0.036874	0.096	0.9242	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.039393	0.032179	-1.224	0.2319	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.455894	0.164660	2.769	0.0102	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	-0.071759	0.218115	-0.329	0.7448	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R6 PTA-NEW TOTAL - REIMB - MONTH 6

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	22775488	1084547	0.921	0.5714
ERROR	26	30602880	1177034		
C TOTAL	47	53378368			

ROOT MSE	1084.912	R-SQUARE	0.4267
DEP MEAN	1841.886	ADJ R-SQ	-0.0364
C.V.	58.90224		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	-1783.513	21753.147	-0.082	0.9353	INTERCEPT
FY86	1	-88.444543	415.813	-0.213	0.8332	DIED IN FY86
HHA	1	-633.523	1038.605	-0.610	0.5472	HHA-BASED HOSPICE
HOSP_SNF	1	-84.947224	791.044	-0.107	0.9153	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	21.388247	387.526	0.055	0.9564	FEMALE
AGE	1	100.679	556.475	0.181	0.8578	AGE AT DEATH
AGE2	1	-0.649197	3.553703	-0.183	0.8565	AGE SQUARED
COLON	1	-488.212	518.736	-0.941	0.3553	COLON CANCER
LUNG	1	-373.963	606.432	-0.617	0.5428	LUNG CANCER
BREAST	1	-111.667	750.941	-0.149	0.8829	BREAST CANCER
PROSTATE	1	-720.310	652.394	-1.104	0.2797	PROSTATE CANCER
URINARY	1	492.190	1415.458	0.348	0.7308	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	0.105329	0.382059	0.276	0.7850	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	-340.644	900.094	-0.378	0.7082	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	980.945	582.595	1.684	0.1042	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-176.832	528.688	-0.334	0.7407	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-217.903	465.584	-0.468	0.6437	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	587.736	578.356	1.016	0.3189	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.016180	0.046745	0.346	0.7320	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.045176	0.040793	-1.107	0.2782	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	-0.033970	0.208736	-0.163	0.8720	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.156799	0.276500	0.567	0.5755	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

DEP VARIABLE: CTTP_R7 PTA-NEW TOTAL - REIMB - MONTH 7

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	21	78489924	3737615	1.555	0.1419
ERROR	26	62487129	2403351		
C TOTAL	47	140977053			

ROOT MSE	1550.275	R-SQUARE	0.5568
DEP MEAN	1948.849	ADJ R-SQ	0.1988
C.V.	79.54823		

NOTE: MODEL IS NOT FULL RANK. LEAST SQUARES SOLUTIONS FOR THE PARAMETERS ARE NOT UNIQUE. SOME STATISTICS WILL BE MISLEADING. A REPORTED DF OF 0 OR B MEANS THAT THE ESTIMATE IS BIASED. THE FOLLOWING PARAMETERS HAVE BEEN SET TO 0, SINCE THE VARIABLES ARE A LINEAR COMBINATION OF OTHER VARIABLES AS SHOWN.
IN PREVIOUS PRINTOUT

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H0: PARAMETER=0	PROB > !T!	VARIABLE LABEL
INTERCEP	1	35891.898	31083.952	1.155	0.2587	INTERCEPT
FY86	1	-397.697	594.172	-0.669	0.5092	DIED IN FY86
HHA	1	-734.714	1484.105	-0.495	0.6247	HHA-BASED HOSPICE
HOSP_SNF	1	-787.261	1130.355	-0.696	0.4923	HOSPITAL OR SNF-BASED HOSPICE
SEX	1	-499.232	553.752	-0.902	0.3756	FEMALE
AGE	1	-842.281	795.169	-1.059	0.2992	AGE AT DEATH
AGE2	1	5.484545	5.078030	1.080	0.2900	AGE SQUARED
COLON	1	-1707.139	741.243	-2.303	0.0295	COLON CANCER
LUNG	1	-1406.131	866.555	-1.623	0.1167	LUNG CANCER
BREAST	1	169.390	1073.050	0.158	0.8758	BREAST CANCER
PROSTATE	1	-1922.447	932.233	-2.062	0.0493	PROSTATE CANCER
URINARY	1	1052.463	2022.605	0.520	0.6072	URINARY CANCER
LEUKEM	0	0	.	.	.	LEUKEMIA
EXPO	1	-0.379055	0.545939	-0.694	0.4936	CERT HOSPICE DAYS IN CNTY BY END DTH YR
CERT	1	258.012	1286.180	0.201	0.8426	LIVED IN CNTY W/CERTIFIED HOSPICE
HASINP8	1	682.972	832.493	0.820	0.4195	HAD PTA INP UTIL 8-12 MONTHS BFORE DTH
HASINP9	1	-238.080	755.464	-0.315	0.7552	HAD PTA INP UTIL 13-18 MTHS BFORE DTH
HASHHA8	1	-168.221	665.292	-0.253	0.8024	HAD PTA HHA UTIL 8-12 MONTHS BFORE DTH
HASHHA9	1	544.691	826.437	0.659	0.5156	HAD PTA HHA UTIL 13-18 MTHS BFORE DTH
CPAS_R8	1	0.092418	0.066795	1.384	0.1782	PTA-NEW INPAT - REIMB - MONTHS 8-12
CPAS_R9	1	-0.036368	0.058290	-0.624	0.5381	PTA-NEW INPAT - REIMB - 1ST HALF YR 2
CHHA_R8	1	0.026353	0.298272	0.088	0.9303	PTA-HOME HLTH - REIMB - MONTHS 8-12
CHHA_R9	1	0.163159	0.395102	0.413	0.6830	PTA-HOME HLTH - REIMB - 1ST HALF YR 2

TABLE 3.26

Model: MODEL1
Dependent Variable: REM_ALV

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	24	69303.10057	2887.62919	29.798	0.0001
Error	1529	148170.33372	96.90669		
C Total	1553	217473.43429			

Root MSE	9.94412	R-square	0.3187
Dep Mean	45.44334	Adj R-sq	0.3080
C.V.	21.66240		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	32.748341	4.93602039	6.632	0.0001
A_ADM	1	0.001288	0.00081047	1.589	0.1123
AARATE_A	1	0.154613	0.01233014	12.539	0.0001
AFDCPCT	1	0.264079	0.12373352	2.143	0.0323
CAPINC	1	0.865641	0.20130524	4.300	0.0001
CTSCAN	1	-0.705142	0.24297897	-2.894	0.0039
EDUC	1	-0.565418	0.37197694	-1.520	0.1287
HERFINDX	1	-3.167752	1.6[illegible]	1.9[illegible]	0.0595
HMOPOP	1	0.002971	0.06192044	[illegible]	0.3674
HMOT18	1	0.050319	0.00011684	[illegible]	0.0064
ICUBEDS	1	-0.004880	0.00478941	-1.741	0.4386
MEGRAD	1	-0.222613	0.21302121	-1.045	0.2961
P65GT	1	-0.000006300	0.00000604	-1.044	0.2964
PHYSPOP	1	0.008714	0.00372026	2.34[illegible]	0.0192
SPMDPCT	1	-0.076113	0.01364974	-5.5[illegible]	0.0001
SNFBEDS	1	-0.014192	0.00488077	[illegible]	0.0037
STGHB	1	0.001447	0.00038620	[illegible]	0.0137
WHITEPCT	1	-0.051747	0.02424277	-2.13[illegible]	0.0330
DSMSA80	1	2.443013	0.71850706	3.40[illegible]	0.0007
EXPO	1	-0.000213	0.00105554	-0.202	0.8399
FY86D	1	1.583578	1.04979989	1.508	0.1316
NONSERV	1	-0.676879	1.13068614	0.59[illegible]	0.5495
NONCERT	1	-0.988780	1.10037330	-0.89[illegible]	0.3690
NSERV6	1	-2.198228	1.30651909	-1.683	0.0927
NCERT6	1	-0.578978	1.36361935	-0.425	0.6712

Dependent Variable: REM_ALV
Numerator: 162.4986 DF: 1 F value: 1.676
Denominator: 96.90669 DF: 1529 Prob>F: 0.1955

TABLE 3.28

DEP VARIABLE: TOTALRM PARTA, PARTB & HOSPICE REIMB FOR YEAR

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL	27	54883659866	2032728143	18.803	0.0001
ERROR	4604	497724970043	108107074		
C TOTAL	4631	552608629908			

ROOT MSE	10397.455	R-SQUARE	0.0993
DEP MEAN	14598.512	ADJ R-SQ	0.0940
C.V.	71.22271		

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=0	PROB > |T|	VARIABLE LABEL
INTERCEP	1	49793.419	40782.851	1.221	0.2222	INTERCEPT
HHA	1	-8253.344	797.433	-10.350	0.0001	
HOSP	1	-8423.826	777.421	-10.836	0.0001	
FREE	1	-8358.680	795.331	-10.510	0.0001	
REGION1	1	9202.553	1780.631	5.168	0.0001	N. ENGLAND
REGION2	1	7568.913	850.084	8.904	0.0001	NY,NJ,PR
REGION3	1	2986.816	956.810	3.122	0.0018	MID ATLANTIC
REGION4	1	3727.180	862.334	4.322	0.0001	S. ATLANTIC
REGION5	1	3889.188	896.822	4.337	0.0001	E.N. CENTRAL
REGION6	1	2258.665	930.788	2.427	0.0153	S. CENTRAL
REGION7	1	5262.271	1007.243	5.224	0.0001	W.N. CENTRAL
REGION8	1	2620.942	1130.645	2.318	0.0205	MOUNTAIN
REGION9	1	3944.647	901.632	4.375	0.0001	S. PACIFIC
AGE	1	190.983	191.272	0.998	0.3181	
AGE_SQ	1	-2.284391	1.289792	-1.771	0.0766	
HTOTLOS	1	42.584172	12.155667	3.503	0.0005	LENGTH OF TOTAL HSPC BENEFIT
HTLOS_SQ	1	-0.050725	0.088216	-0.575	0.5653	
HDRDOD	1	-0.384071	0.469972	-0.817	0.4138	
COLON	1	-1135.155	444.441	-2.554	0.0107	
LUNG	1	-1189.708	456.127	-2.608	0.0091	
BREAST	1	-3360.303	731.596	-4.593	0.0001	
REPRO	1	-1453.907	597.563	-2.433	0.0150	
URINARY	1	1154.447	872.343	1.323	0.1858	
LEUK	1	1986.502	1482.638	1.340	0.1804	
NON	1	-37.963593	701.669	-0.054	0.9569	
SEX	1	816.842	322.340	2.534	0.0113	
WHITE	1	-997.005	851.932	-1.170	0.2419	
BLACK	1	403.001	1029.696	0.391	0.6955	

TEST: HHA_HOSP	NUMERATOR:	16833281	DF: 1	F VALUE:	0.1557
	DENOMINATOR:	1.1E+08	DF: 4604	PROB >F :	0.6932
TEST: HHA_FREE	NUMERATOR:	5879140	DF: 1	F VALUE:	0.0544
	DENOMINATOR:	1.1E+08	DF: 4604	PROB >F :	0.8156

APPENDIX B

BIBLIOGRAPHY

BIBLIOGRAPHY

Abel, E.K. The hospice movement: institutionalizing innovation. Int. J. Health Serv. 1986, 16(1), pp. 71-85.

Abrams, R. Jameson, G., Poehlman, M. Snyder, S. Terminal Care in Cancer. N. Engl. J. Med., 1945 Jun. 232, pp. 719-724.

Adams, F. Cardiovascular Effects of Phenelzine and Amitriptyline (letter). J. Clin. Psychiatry, 1982, 43, p. 472.

Aday, L.A., Fleming, G.V. and Anderson, R.M. Access to Medical Care in the U.S.: Who Has It? Who Doesn't. Chicago, IL: Pluribus Press, 1984.

Administrative Rules of Montana. 16.32.373 (1984).

Agnew, L.R. Humanism in medicine. Lancet, 1977, Sep 17, 2(8038), p. 596-8.

Aiken, L.H., Marx, M.M. Hospices. Perspectives on the public policy debate. Am. Psychol., 1982 Nov. 37(11), p. 1271-9.

Aiken, M., Dewar, R., DiTomaso, N., Jerald, H. and Zeitz, G. Coordinating Human Services. San Francisco: Jossey-Bass Publishers, 1975.

Allison, H., Gripton, J., Rodway, M. Social work services as a component of palliative care with terminal cancer patients. Soc. Work Health Care, 1983 Summer, 8(4), p. 29-44.

Alvarez, W. Care of the dying. JAMA, 1952 Sept. 13, pp. 86-91.

Amado, A., Cronk, B.A., Mileo, R. Cost of terminal care: home hospice vs. hospital. Nurs. Outlook, 1979 Aug. 27 (8), p. 522-6.

Amenta, M.M. Death anxiety, purpose in life and duration of service in hospice volunteers. Psychol. Rep., 1984, Jun 54(3), p. 979-84.

Amenda, M.M. Traits of hospice nurses compared with those who work in traditional settings. J. Clin. Psychol., 1984, Mar. 40(2), p. 414-20.

American Cancer Society. Cancer Facts and Figures: 1984. New York: American Cancer Society, 1985.

Ames, R.P., Mineau, D., Petrushevich, K. Mercy Hospice: a hospital-based program. Hosp. Prog., 1979 Mar. 60(3), p. 63-7.

Annas, G.J. Fashion and freedom: when artificial feeding should be withdrawn. Am. J. Public Health., 1985 Jun. 75(6), pp. 685-688.

Annas, G.J. Quinlan, Saikewicz, and now Brother Fox. Hastings Cent. Rep., 1980 Jun. 10(3), p. 20-1.

Annotated Code of Maryland §§19-901 - 19-903 (1980-83 amendments) and Article 48A §477W (1982).

Annotated Laws of Massachusetts C.111 §57D and C.118E §6 (1984).

Arkansas Department of Health, Rules and Regulations for Hospice in Arkansas (1983).

Austin, C.D. Case management and long term care options and opportunities. Health Soc. Work., 1983. 8, pp. 16-30.

Babbs, C.F. Fallacious arguments against resuscitation research. Am. J. Emerg. Med., 1985 Sep. 3(5), pp. 461-466.

Bahnson, C.B. Psychologic and emotional issues in cancer: the psychotherapeutic care of the cancer patient. Semin. Oncol., 1975 Dec. 2(4), p. 293-309.

Bahnson, M.B., Bahnson, C.B. Ego defenses in cancer patients. Ann. NY. Acad. Sci., 1969. 164, p. 546-559.

Baines, M., Oliver, D.J., and Carter, R.L. Medical management of intestinal obstruction in patients with advanced malignant disease. A clinical and pathological study. Lancet. 1985 Nov. 2, 2(8462), pp. 990-993.

Baines, M.J. Cancer pain. Postgrad. Med. J., 1984 Dec. 60(710), p. 852-7.

Ball, J.F. Widow's grief: the impact of age and mode of death. Omega 1976-77, 7(4), p 307-33.

Baron, C.J. Medicine and human rights: emerging substantive standards and procedural protections for medical decision making within the American family. J. Geriatr. Psychiatry, 1985, 18(2), pp. 95-141.

Barzelai, L.P. Evaluation of a home-based hospice. J. Fam. Pract., 1982 Feb. 12 (2), p. 241-5.

Bass, D.M., Pestello, E.P., Garland, T.N. Experiences with home hospice care: determinants of place of death. Death Educ., 1984 Winter 8(4), p. 199-222.

Baudman, E., Piper, L., Briet, A.I., Wright, A. eds. The Holistic Health Lifebook. Berkeley, CA: And/Or Press, Inc. 1981.

Bayer, R., Callahan, D., Fletcher, J., Hodgson, T., Jennings, B., Monsees, D., Sieverts, S., Veatch, R. The care of the terminally ill: morality and economics. N. Engl. J. Med., 1983 Dec 15. 309(24), p. 1490-4.

Bayer, R., and Feldman, E. Hospice under the Medicare wing. Hastings-Cent. Rep., 1982 Dec. 12(6), p. 5-6.

Benoliel, J.Q. Death counseling and human development: issues and intricacies. Death Educ., 1981 Winter 4(4), p. 337-53.

Beresford, L. Evaluating hospice. NHO Hospice News, 1986 May, 4(5), p. 5-6.

Beresford, L. Marketing compassion (or marketing as a survival strategy). NHO Hospice News, 1986 January, 4(1), p. 4-5.

Berger, R. Cost analysis of AIDS cases in Maryland. Maryland Medical Journal, December 1985, 34(12), pp. 1173-1175.

Best, G.A. and Pope, L. Choosing a home volunteer for AIDS patients. American Journal of Hospice Care, 1986 Mar./Apr., pp. 41-43.

Beszterczey, A. Staff stress on a newly-developed palliative care service. The psychiatrist's role. Can. Psychiatr. Assoc. J., 1977 Nov. 22(7), p. 347-353.

Bickel-Wanda-Lea. Hospice: An alternative treatment model. Nova University School of Professional Psychology, Psy. D., 1983, 76 pp.

Billings, J.A. Comfort measures for the terminally ill. Is dehydration painful? J. Am. Geriatr. Soc., 1985 Nov., 33(11), p. 808-810.

Birnbaum, H., Mor, V., Greer, D.S. Home care in hospices. Caring, 1983 Jun 2(6), p. 40-4.

Birnbaum, H.G., Kidder, D. What does hospice cost? Am. J. Public Health, 1984 Jul 74(7), p. 689-97.

Black, P. Neurosurgical nanagement of cancer pain. Seminars in Oncology. 1985 Dec., 12(4), pp. 368-374.

Bloom, B.S., Kissick, P.D. Home and hospital cost of terminal illness. Med. Care, 1980 May 18(5), p. 560-4.

Blue Cross adds national hospice benefit. NHO Hospice News, 1985 Nov., p.6.

Bonham, G.S., Gochman, D.S., Burgess, L., and Fream, A.M. The Hospice Decision Multiple Determinants Final Report. Louisville, KY: Urban Studies Center and Kent School of Social Work, University of Louisville, 30 June 1986.

Bonica, J.J. Management of cancer pain. Recent Results Cancer Res. 1984. 89, p. 13-27.

Bourke, M.P. The continuum of pre- and post-bereavement grieving. Br. J. Med. Psychol. 1984 Jun. 57 (Pt 2), p. 121-5.

Brandt, E.N., Jr. Compassionate pain relief: is heroin the answer? N. Engl. J. Med. 1984 Aug 23, 311(8), p. 530-2.

Brenner, P.R. Hospice applications of family systems theory: A helpful aid to programs. Am. J. Hosp. Care. 1985 Nov/Dec., 2(6), pp. 13-16.

Brescia, F.J., Sadof, M., Barstow, J. Retrospective analysis of a home care hospice program. Omega: Journal of Death & Dying. 1984-85, Vol. 15(1) 37-44.

Brink, G., Cleary, M.A., Hollander, N., Johnson-Hurzeler, R., Krant, M., Parks, P., Schechter, D.S. Experts probe issues around hospice care. Hospitals. 1980 Jun 1., 54(11), p. 63-7.

Brody, H., Lynn, J. The physician's responsibility under the new Medicare reimbursement for hospice care. N. Engl. J. Med. 1984 Apr 5., 310(14), p. 920-2.

Brooks, C.H. The potential cost savings of hospice care: a review of the literature. Health Matrix. 1983 Summer. 1(2), p. 49-53 (Review).

Brooks, C.H., Smyth-Staruch, K. Hospice home care cost savings to third-pary insurers. Med. Care. 1984 Aug 22(8), p, 691-703.

Brown, N.K., Brown, M.A., Thompson, D. Decision making for the terminally ill patient. pp. 319-329. In: Cullen, J.W. et al., eds. Cancer: The Behavioral Dimensions. New York: Raven Press, 1976.

Buckberg, J., Renman, D., Holland, J.C. Depression in hospitalized cancer patients. Psychosom. Med. 1984. 46, pp. 199-212.

Buckingham, R.W., Lupu, D. A comparative study of hospice services in the United States. Am. J. Public Health. 1982 May 72(5), p. 455-63.

Buckingham, R.W., 3d., Lack, S.A., Mount, B.M., MacLean, L.D., Collins, J.T. Living with the dying: use of the technique of participant observation. Can. Med. Assoc. J. 1976 Dec 18, 115(12), p. 1211-5.

Burda, D. and Powills, S. AIDS: a time bomb at hospitals' door. Hospitals. January 5, 1986, 60(1), pp. 54-61.

Burne, S.R. A hospice for children in England. Pediatrics. 1984 Jan. 73(1), p. 97-8.

Burns, L. and Carney, K. Patterns of hospice care--the RN role. The Hospice Journal. 1986 Spring, 2(1), pp. 37-61.

Burns, L. and Carney, K. Chronic illness and disability in the hospice setting. Am. J. Hosp. Care. 1985 Sep./Oct., 2(5), pp. 37-41.

Burt, M.E., Stein, T.P., Schwade, J.G., Brenna, M.F. Whole-body protein metabolism in cancer-bearing patients. Effect of total parenteral nutrition and associated serum insulin response. Cancer. 1984 Mar 15. 53(6), p. 1246-52.

Butterfield-Picard, H., Magno, J.B. Hospice the adjective, not the noun. The future of a national priority. Am. Psychol. 1982 Nov. 37(11), p. 1254-9.

California Legislature, 1983-84, Assembly Bill 2442 (1984).

Calliari, D. Administrative perspectives on care of patients with AIDS. Topics in Clinical Nursing. July 1984, 6(2), pp. 72-75.

Cameron, J., Parkes, C.M. Terminal care: evaluation of effects on surviving family of care before and after bereavement. Postgrad. Med. J. 1983 Feb 59(688), p. 73-8.

Cancer Care, Inc. The impacts, costs, and consequences of catastrophic illness on patients and families. A report of a social research study of selected families stricken by advanced cancer. New York: Author, March 1973.

Cantor, M., Rehr, H., Trotz, V. Workshop II - Case management and family involvement. Mt. Sinai. J. Med. 1981. 48, pp. 566-568.

Carney, K. An economic perspective on hospices. Socioecon. Issues Health. 1981, p. 93-108.

Cassem, N.H., Stewart, R.S. Management and care of the dying patient. Int. J. Psychiatry Med. 1975. 6(1-2), p. 293-304. (Review).

Cassileth, B.R., Lusk, E.J., Strouse, T.B., Miller, D.S., Brown, L.L., Cross, P.A. A psychological analysis of cancer patients and their next-of-kin. Cancer. 1985 Jan 1. 55(1), p. 72-6.

Chambers, M., Gutierrez, L., Miller, L., Vesper, E., Villareal, M. Hospice Volunteers. Unpublished master's thesis, School of Social Welfare, University of California at Los Angeles, 1983.

Cherniss, C. Staff burnout: job stress in the human services. In: Studies in Community Mental Health. Beverly Hills: Sage Publications, 1980.

Chiriboga, D.A., Jenkins, G., Bailey, J. Stress and coping among hospice nurses: test of an analytic model. Nurs. Res. 1983 Sep-Oct. 32(5), p. 294-9.

Chlebowski, R.T. Critical evaluation of the role of nutritional support with chemotherapy. Cancer, 1985 Jan 1, 55(1 Suppl.), p. 268-72 (Review).

Clamon, G.H., Feld, R., Evans, W.K., Weiner, R.S., Moran, E.M., Blum, R.H., Kramer, B.S., Makuch, R.W., Hoffman, F.A., DeWys, W.D. Effect of adjuvant central iv hyperalimentation on the survival and response to treatment of patients with small cell lung cancer: a randomized trial. Cancer. Treat. Rep. 1985 Feb. 69(2), p. 167-77.

Clark, B.E. Considerations in pain management of the hospice patient: a literature review. Am. J. Hospice Care. 1984 Fall. 1, pp. 23-27.

Clayton, P.J. Mortality and morbidity in the first year of widowhood. Arch. Gen. Psychiatry. 1974. 125, pp. 747-750.

Clouser, K.D. Allowing or causing: another look. Ann. Intern. Med. 1977 Nov. 87(5), p. 622-4.

Code of Georgia Annotated, §§31-7-170-31-7-179 (1983).

Code of Laws of South Carolina §§44-71-10 - 44-71-110 (1983).

Code of Virginia §§32.1-162.1 - 32.1-162.6 (1981).

Code of West Virginia §§16-5I-1 - 16-5I-6 (1984).

Colorado Department of Health, Health Facilities Regulations, Chapter XXI (1984).

Compilation of Codes, Rules and Regulations of the State of New York Title 10, §§432.1, 700.2, 717.1-717.3, 791.1-794.4 (1984).

Connecticut Agencies Regulations, §§19-13-D4b (1979).

Connecticut Public Acts, No. 78-76 (1978).

Connor, S. National hospice inpatient acuity survey. Walnut Creek, CA: Kaiser Permanente Medical Center Hospice. 1986.

Consolidated Omnibus Budget Reconciliation Act of 1985, 51 Fed. Reg. 6236 (1986).

Cook, J.A. A death in the family: parental bereavement in the first year. Suicide Life Threat. Behav. 1983 Spring 13(1), p. 42-61.

Copeland, E.M., 3d., Daly, J.M., Dudrick, S.J. Nutrition and cancer. Int. Adv. Surg. Oncol. 1981, 4, p. 1-13 (Review).

Corless, I.B. Implications of the New Hospice Legislation and the Accompanying Regulations. Nursing Clinics of North America. 20(2). June 1985, pp. 281-297.

Corless, I.B. Physicians and nurses: roles and responsibilities in caring for the critically ill patient. Law Med. Health Care. 1982 Apr 10(2), p. 72-6.

Corr, C.A. and Corr, D.M. Pediatric Hospice Care. Pediatrics, 1985 Nov., 76(5), pp. 774-780.

Corr, C.A., Corr, D.M. eds. Hospice Approaches to Pediatric Care. New York: Springer, 1985.

Craven, J., Wald, F.S., Hospice care for dying patients. Am. J. Nurs. 1975 Oct 75(10), p. 1816-22.

Creek, L.V. A homecare hospice profile: description, evaluation, and cost analysis. J. Fam. Pract. 1982 Jan 14 (1), p. 53-8.

Curran, W.J. Defining appropriate medical care: providing nutrients and hydration for the dying. N. Engl. J. Med. October 10, 1985, 313(15), pp. 940-942.

Curran, J.W., Morgan, W.M., Hardy, A.M., Jaffe, H.W., Darrow, W.W., and Dowdle, W.R. The epidemiology of AIDS: current status and future prospects. Science. September 27, 1985, 229, pp. 1352-1357.

Dason, E.M. Planning and development issues in implementing community-based mental health services for the elderly. Hosp. Community Psychiatry. 1982. 33, pp. 137-141.

Degner, L. The relationship between some beliefs held by physicians and their life-prolonging decisions. Omega. 1974. 5(3), p. 223-31.

Delaware Code, Title 16, §122(3)(m) (1982).

Delaware State Board of Health, Rules and Regulations Pertaining to the Delivery of Hospice Services (1983).

Derogatis, L.R., et al. The prevalence of psychiatric disorder among cancer patients. JAMA. 1983. 249, pp. 751-757.

Deuchar, N. AIDS in New York City with particular reference to the psychosocial aspects. British Journal of Psychiatry. 1984, 145, pp. 612-619.

DeWys, W. Management of cancer cachexia. Seminars in Oncology. 1985 Dec., 12(4), pp. 452-460.

Dimond, M. Bereavement and the elderly: a critical review with implications for nursing practice and research. J. Adv. Nurs. 1981 Nov. 6(6), p. 461-70.

Dindogru, A., Pasick, S., Rutkowski, Z., Leichman, L.P., Vaitkevicius, V.K. Total parenteral nutrition in cancer patients. JPEN. 1981 May/Jun 5(3), p. 243-5.

Dionne, L. La Maison Michel Sarrazin. A Canadian community network of care for the dying cancer patient. Am. J. Hosp. Care. 1986 May/June, 3(3), pp. 27-32.

District of Columbia Code §§32-1301 - 32-1309 (1983).

Dixon, C.E., Emery, A.W., Hurley, R.S. Nutrition and patients with a limited life expectancy. Am. J. Hospice Care. 1985 May/Jun, pp. 27-33.

Dorang, E.S. A VNA-organized hospice volunteer program. Nurs. Outlook. 1981 Mar. 29(3), p. 170-3.

Dornan, V. Nutrition. 2. Diet in terminal illness. Nurs. Mirror. 20 February 1985, 160(8), pp. 38-41.

Dowben, C. Prometheus revisited: popular myths, medical realities, and legislative actions concerning death. J. Health Polit. Policy Law. 1980 Summer, 5(2), p. 250-76.

Downe-Wamboldt, B. and Ellerton, M.L. A study of the role of hospice volunteers. The Hospice Journal. 1985/86 Winter, pp. 17-31.

Dresser, R. Discontinuing nutrition support: a review of the case law. J. Am. Diet. Assoc. 1985a: Oct., 85(10), pp. 1289-1292.

Dresser, R. When patients resist feeding. Medical, ethical, and legal considerations. J. Am. Geriatr. Soc. 1985b: Nov., 33(11), pp. 790-794.

DuBois, P.M. The hospice way of death. New York, NY: Human Sciences Press. 1980. 212 pp.

Dufault, K. Active vs. passive euthanasia--where's the distinction? AORN J. 1985 June, 41(6), p. 1090, 1092-1094.

Dunea, G. When to stop treatment. Br. Med. J. (Clin. Res.). 1983 Oct 8. 287(6398), p. 1056-7.

Dunphy, J.E. Annual discourse - on caring for the patient with cancer. N. Engl. J. Med. 1976 Aug 5, 295(6), p. 313-9.

Dying easier. [editorial] The Economist. 10 May 1986, p. 66.

Edwardson, S.R. Physician acceptance of home care for terminally ill children. Health Serv. Res. 20 April 1985, 20(1), pp. 83-101.

Eibach, U. (Clinics for terminally ill and dying patients?) Z. Gerontol. 1980, Nov-Dec 13(6), p. 547-51.

Enlow, R. Public response and public health: scientific, social, and political interdigitations. Special Session. Ann. N.Y. Acad. Sci. 1984, 437, pp. 290-311.

Epstein, L.M., Avni, A., Hopp, C., Flug, D. Evaluation of program of aftercare for patients discharged from hospital. Med. Care. 1973. 11, pp. 320-327.

Ermann, D. and Gabel, J. "The Changing Face of American Health Care: Multihospital Systems, Emergency Centers, and Surgery Centers." Medical Care 23(5):401-420, 1985.

Evans, A.L. and Brody, B.A. The do-not-resuscitate order in teaching hospitals. JAMA. 19 April 1985, 253(15), pp. 2236-2239.

Evans, C. and McCarthy, M. Prognostic uncertainty in terminal care: can the Karnofsky index help? Lancet. 25 May 1985, 1(8439), pp. 1204-1206.

Evans, C., McCarthy, M. Referral and survival of patients accepted by a terminal care support team. J. Epidemiol. Community Health. 1984 Dec. 38(4), p. 310-4.

Fauci, A.S., moderator, NIH conference. The acquired immunodeficiency syndrome: an update. Ann. Intern. Med. 1985, 102(6), pp. 800-813.

Feder, S.L. Attitudes of patients with advanced malignancy. New York: Group for the Advancement of Psychiatry. Symposium.

Feifel, H. (ed). The Meaning of Death. New York: McGraw-Hill, 1959.

Feifel, H. The meaning of dying in American society. In: Ethel Percy Andrus Gerontology Center. Dealing With Death. University of Southern California, 1973.

Fergusson, J. and Hobbie, W. Home visits for the child with cancer. Nurs. Clin. North. Am. 1985 Mar., 20(1), pp. 109-115.

Ferrer-Brechner, T. Anesthetic management of cancer pain. Seminars in Oncology. 1985 Dec., 12(4), pp. 431-437.

Firshein, J. AIDS funding decisions lack consensus opinion. Hospitals. January 5, 1986, 60(1), p. 35.

Fisher, R.H., Nadon, G.W., Shedletsky, R. Management of the dying elderly patient. J. Am. Geriatr. Soc. 1983 Sep. 31(9), p. 563-4.

Fitts, W.T., Ravdin, I.S. What Philadelphia physicians tell patients with cancer. JAMA. 1953. 153, pp. 901-904.

Florida Administrative Code, Chapter 10A-12 (1982).

Florida Revised Statutes Annotated §§400.601-400.615 (1979).

Flynn, A., Stewart, D.E. Where do cancer patients die? A review of cancer deaths in Cuyahoga County, Ohio, 1957-1974. J. Community Health. 1979 Winter. 5(2), p. 126-30.

Fobair, P. Do cancer patients take more time? A survey of San Francisco Bay Area home health agencies. Home Health Rev. 1982 Feb. 4(4), p. 17-27. (Review).

Ford, G. Training for work in hospices [letter]. Lancet. 17 May 1986, 1(8490), pp. 1156-1157.

Forrest, W.H., et al. Dextroamphetamine with morphine for the treatment of postoperative pain. N. Engl. J. Med. 1977. 296, pp. 712-715.

Fox, R.C. The sting of death in America society. Soc. Serv. Rev. 1981 Mar. 55(1), p. 42-59.

France, R.D., Houpt, J.L., Ellinwood, E.H. Therapeutic effects of antidepressants in chronic pain. Gen. Hosp. Psychiatry, 1984. 6(1), pp. 55-63.

Frank, E., Weiss, S.H., Compas, J.C., Bienstock, J., Weber, J., Bodner, A., and Landesman, S.H. AIDS in Haitian Americans: a reassessment. Cancer Research. September 1985, 45, pp. 4619-4620.

Fraser, I. Medicare reimbursement for hospice care: ethical and policy implications of cost-containment strategies. J. Health Polit. Policy Law. 1985 Fall, 10(3), pp. 565-578.

Freeman, M., Frankmann, C., Beck, J., Valdivieso, M. Prognostic nutrition factors in lung cancer patients. JPEN, 1982 Mar-Apr. 6(2), p. 122-7.

Fryer, J.E. The psychiatrist in hospice care: proper use of psychotherapeutic skills and psychotropic medication. Seminars in Oncology. 1985 Dec., 12(4), pp. 445-451. (Review).

Gallagher-Allred, C. Dietitians are necessary in hospice programs. Am. J. Hosp. Care. 1985 Nov/Dec., 2(6), pp. 11-12.

Galt, M.A., Galt, K.A. Pharmaceutical services in hospital-based home health-care agencies--1982. Am. J. Hosp. Pharm. 1984 Nov. 41(11), p. 2355-9.

Garfield, C.A., Jenkins, G.J. Stress and coping of volunteers counseling the dying and bereaved. Omega. 1981-82. 12(1), p. 1-13.

Garfield, C.A., Larson, D.G., Schuldberg, D. Mental health training and the hospice community: a national survey. Death Educ. 1982 Fall 6(3), p. 189-204.

Garvey, E.C. Guidelines for caring for the AIDS patient in the home setting. NITA. 1985 Nov./Dec., 8(6), pp. 481-483.

Geltman, R.L., Paige, R.L. Symptom management in hospice care. Am. J. Nurs. 1983 Jan. 83(1), p. 78-85.

General Accounting Office (GAO). Hospice Care--A Growing Concept in the United States. Report to the Congress. 1979 Mar 6. 39 pp.

General Acts of Arkansas, Act 283 (1983).

General Laws of Rhode Island §23-17-2 (1983).

General Statutes of North Carolina §§131E-200 - 131E-207 (1984).

Gerber, I., Weiner, A., Battin, D., Arkin, A. Grief therapy to the aged bereaved. In: B. Schoenberg and I. Gerber, eds. Bereavement: Its Psychological Aspects. New York: Columbia University Press, 1975, pp. 310-313.

Germain, C.P. Nursing the dying: implications of Kubler-Ross' staging theory. Ann. Am. Acad. Pol. Soc. Sci. 1980 Jan. (447), p. 46-58.

Ghavimi, F., Shils, M.E., Scott, B.F., Brown, M., Tamaroff, M. Comparison of morbidity in children requiring abdominal radiation and chemotherapy, with and without total parenteral nutrition. J. Pediatr. 1982 Oct. 101(4), p. 530-7.

Giacquinta, B. Helping families face the crisis of cancer. Am. J. Nurs. 1977. 77, p. 1585-88.

Gibson, D.E. Hospice and the new devaluation of human life. Ment. Retard. 1984 Aug. 22(4), p. 157-69.

Glaser, B., Straus, A.L. Awareness of Dying. Chicago: Aldine Publishing Co., 1966.

Glaser, B., Straus, A.L. Time for Dying. Chicago: Aldine Publishing Co., 1967.

Glover, D.D., Lowry, T.F., Jacknowitz, A.I. Brompton's mixture in alleviating pain of terminal neoplastic disease: preliminary results. South Med. J. 1980 Mar. 73(3), p. 278-82.

Godkin, M.A., Krant, M.J., Doster, N.J. The impact of hospice care on families. Int. J. Psychiatry Med. 1983-84. 13(2), p. 153-65.

Goldberg, I.K., Kutscher, A.H., Schoenberg, B., Gralnick, H., Kutscher, H. Psychopharmacologic and analgesic agents employed in the terminal care of 100 cancer patients. In: I.K. Goldberg, S. Malitz, and A.H. Kutscher, eds. Psychopharmacologic Agents for the Terminally Ill and Bereaved. New York: Columbia University Press, 1973.

Goldberg, R.J. Management of depression in the patient with advanced cancer. JAMA. 1981 Jul 24/31. 246(4), p. 373-76.

Goldberg, R.J., Mor, V. Psychotropic drug use in terminal cancer patients: report from the National Hospice Study. Psychosomatics. In press.

Goldin, G. A protohospice at the turn of the century: St. Luke's House, London, from 1893 to 1921. J. Hist. Med. Allied Sci. 1981 Oct. 36(4). p, 383-415.

Goldsmith, M.F. HTLV-3 testing of donor blood imminent; complex issues remain. JAMA. January 11, 1985, 253(2), pp. 173-175, 179-181.

Golin, C.B. Euthanasia feared as "solution" to rising health costs. Am. Med. News. 1985 May 17, p. 3, 22-23.

Gordon, R.S. A perspective on AIDS cases among health care workers. Ann. NY. Acad. Sci. 1984, 437, p. 420.

Gottlieb, A. (The role of open neurosurgery in the treatment of cancer pain). Minerva Med. 1984 Jun 8. 75(24), p. 1469-74.

Gray Toft, P.A., Anderson, J.G. Organizational stress in the hospital: development of a model for diagnosis and prediction. Heal. Serv. Res. 1985 Feb 19(6), p. 753-74.

Gray Toft, P. Effectiveness of a counseling support program for hospice nurses. J. Counseling Psychol. 1980 Jul. 27(4), pp. 346-354.

Greene, P.E. The pivotal role of the nurse in hospice care. CA. 1984 Jul-Aug. 34(4), p. 204-5.

Greer, D.S. Hospice: lessons for geriatricians. J. Am. Geriatr. Soc. 1983 Feb. 31(2), p. 67-70.

Greer, D.S., Mor, V. From social movement to health care industry: ten years of hospice. Hastings Cent. Rep. In press.

Greer, D.S. and Mor, V. How Medicare is Altering the Hospice Movement. Hastings Center Report 15(5):5-10, October 1985.

Greer, D.S., Mor, V., Kastenbaum, R. eds. The Hospice Experiment: Is It Working? Baltimore, MD: Johns Hopkins University Press, in press.

Greer, D.S., Mor, V., Morris, J.N., Sherwood, S., Kidder, D., Birnbaum, H. Final Report of the National Hospice Study, NTIS No. PB86226073LP, 1986.

Greer, D.S., Mor, V., Morris, J.N., Sherwood, S., Kidder, D., Birnbaum, H. An alternative in terminal care: results of the National Hospice Study. J. Chronic. Dis. In press.

Greer, D.S., Mor, V., Sherwood, S., Morris, J.N., Birnbaum, H. National Hospice Study analysis plan. J. Chronic Dis. 1983, 36(11), pp. 737-80.

Greer, D.S., Mor, V., Sherwood, S., Morris, J.N., Kidder, D., Birnbaum, H. National Hospice Study Final Report: Executive Summary. Center for Health Care Research, Brown University. Submitted for publication.

Greer, D.S., Mor, V., Sherwood, S., Morris, J.N., Birnbaum, H. Data collection methodology and instruments of the National Hospice Study. Center for Health Care Research, Brown University, 1984.

Grisham, M., Tekawa, I. Progress Report on the Costs and Activities of Case Management in MSSP: Results of a Time Study. Berkeley, CA: University of California, 1982.

Groth-Juncker, A., McCusker, J. Where do elderly patients prefer to die? Place of death and patient characteristics of 100 elderly patients under the care of a home health care team. J. Am. Geriatr. Soc. 1983 Aug. 31(8), p. 457-61.

Hadlock, D.C. The hospice: intensive care of a different kind. Seminars in Oncology. 1985 Dec., 12(4), pp. 357-367.

Haid, M., Fowler, M., Nicklin, O., LeTourneau, E. People and dollars: the experience of one hospice. South Med. J. 1984 Apr. 77(4), p. 470-2.

Haines, A. and Booroff, A. Terminal care at home: perspective from general practice. Br. Med. J. [Clin. Res.]. 19 April 1986, 292(6527), pp. 1051-1053.

Halper, T. On death, dying and terminality: today, yesterday, and tomorrow. J. Health Polit. Policy Law. 1979 Spring 4(1), p. 11-29 (Review).

Hannan, E.L. O'Donnell, J.F. An evaluation of hospices in the New York State Hospice Demonstration Program. Inquiry. 1984 Winter. 21(4), pp. 338-348.

Hansen, M., Evashwick, C. Hospice: staffing and cost implications for home health agencies. Home Health Care Serv. Q. 1981 Spring 2(1), p. 61-81.

Hardy, A.M., Allen, J.R., Morgan, W.M., and Curran, J.W. The incidence rate of acquired immunodeficiency syndrome in selected populations. JAMA. January 11, 1985, 253(2), pp. 215-220.

Hardy, A.M., Rauch, K., Echenberg, D., Morgan, W.M., and Curran, J.W. The economic impact of the first 10,000 cases of acquired immunodeficiency syndrome in the United States. JAMA. January 10, 1986, 255(2), pps. 209-211.

Hardy, T.K., Pritchard, R.I. Physical distress suffered by terminal cancer patients in hospital. Anaesthesia. 1977 Jul-Aug. 32(7), p. 647-9.

Harel, Z., Noelker, J. and Blake, B. "Comprehensive Services for the Aged: Theoretical and Empirical Perspectives." The Gerontologist 25(6):644-649, 1985.

Harper, B.C. Death: The Coping Mechanism of the Health Professional. Greenville, S.C.: Southeastern Univ. Press, 1977, 123 pp.

Hartz, W.H. and Gatenby, R.A. Interventional radiology in palliative care. Seminars in Oncology. 1985 Dec., 12(4), pp. 390-393.

Haverkos, H.W. and Drotman, D.P. The epidemiology of the acquired immunodeficiency syndrome. Front. Radiat. Ther. Onc. 1985, 19, pp. 8-13.

Hays, D.M., Hoffman, K.I., Williams, K.O., Miller, R. Effects of intensive clinical exposure on attitudes of medical students toward cancer-related problems. Cancer, 1985 Feb. 1, 55(3), p. 636-42.

Hellinger, F.G. "Forecasting the Personal Medical Care Costs of AIDS from 1988 through 1991." Public Health Reports 103, MO.3 (1988): 309-319.

Henningsen, F., Ullner, R. (Psychotherapeutic care of dying and critically ill children and their relatives (author's transl.)) MMW, 1981 Feb 13, 123(7), p. 247-50. (Review).

Hersey, J.C., Probst, J.C., and Portnoy, B. Evaluation of a National Health Promotion Media Campaign: Analysis of Message Strategy. Final Report. Arlington, VA: Kappa Systems, Inc., 1982.

Herxheimer, A., Begent, R., MacLean, D., Phillips, L., Southcott, B., and Walton, I. The short life of a terminal care support team: experience at Charing Cross Hospital. Br. Med. J. [Clin. Res.]. 22 June 1985, 290(6485), pp. 1877-1879.

Hinton, J. Comparison of places and policies for terminal care. Lancet. 1979 Jan 6. 1(8106), p. 29-32.

Kioki, K., Nishi, M., Yamamoto, M. (Nutritional management of the patients after total gastrectomy using total parenteral nutrition (TPN)). Nippon-Geka-Gakkai-Zasshi. 1984 Sep. 85(9), p. 974-8.

Hiris, J. and Mor, V. Hospice organizational characteristics and the patient's quality of life, organizational-level analysis. 1986. Unpublished Manuscript.

Holback, J.A., Fink, S.G. Consortium's hospice volunteer training boosts professionalism, cooperation. Hosp. Prog. 1983 Nov. 64(11), p. 45-7, 54.

Holden, C. The hospice movement and its implications. Ann. Am. Acad. Pol. Soc. Sci. 1980 Jan. (447), p. 59-63.

Holland, J.C. and Tross, S. The psychosocial and neuropsychiatric sequelae of the acquired immunodeficiency syndrome and related disorders. Ann. Int. Med. 1985, 103, pp. 760-764.

Holland, J.C. Coping with cancer: a challenge to the behavioral sciences. pp. 263-268. In: Cullen, J.W. et al., eds. Cancer: The Behavioral Dimensions. New York: Raven Press, 1976.

Holman, M. Hospice patients without caregivers. Am. J. Hosp. Care. 1986 May/June, 3(3), pp. 19-26.

Holtz, M., Dobro, J., Palinkas, R., Kapila, R., and Oleske, J. Psychological impact of AIDS. JAMA. 1983, 250, p. 167.

Holzemer, S.P. The lodging of patients with AIDS as your guests: case studies are presented to discuss the role of nurses. American Journal of Hospice Care. 1986 Mar./Apr., pp. 28-31.

Hopping, B.L. Nursing students' attitudes toward death. Nurs. Res. 1977 Nov-Dec. 26(6), p. 443-7.

Hospice comes of age [editorial]. Lancet. 3 May 1986, 1(8488), p. 10, 13-14.

Howes, A.C. Nursing diagnoses and care plans for ambulatory care patients with AIDS. Topics in Clinical Nursing. July 1984, pp. 61-66.

Hughes, M. Perceptions and services of hospice volunteers. Ripon, WI: Hospice Caring of Central Wisconsin, Inc., 1986.

Hulka, B.S., Zyzanski, S.J., Cassel, J.C., Thompson, S.J. Scales for measurement of attitudes toward physicians and primary medical care. Med. Care. 1970. 8(5), pp. 429-435.

Illinois Administrative Code, Title 77, §§280.101-280.901 (1985).

Illinois Revised Statutes, Chapter III 1/2 §§6101-6114 (1983).

Indiana Acts, House Enrolled Act No. 1131 (1986).

Iowa General Assembly, House File 2436 (1984).

Infection Control. Special Report. A hospital-wide approach to AIDS: recommendations of the advisory committee on infections within hospitals. American Hospital Association. May 1984, 5(5), pp. 242-248.

Ingram, D.K., Barry, J.R. National statistics on deaths in nursing homes. Interpretations and implications. Gerontologist, 1977 Aug. 17(4), p. 303-8.

Intagliata, J. Improving the quality of community care for the chronically mentally disabled: the role of case management. Schizophrenia Bull. 1982. 8, pp. 655-674.

Janson, M.A.H. Clinical notes. The prescription to grieve. Hospice J. 1985 Spring 1(1), p. 103-09.

Joint Commission on Accreditation of Hospitals (JCAH). Hospice Standards Manual. Chicago: Author, 1983.

Joint Commission on Accreditation of Hospitals (JCAH). The Hospice Project. Draft Report of the W.K. Kellogg Foundation Funded Project. Chicago: Author, 1984.

Jones, J.S. Answering the relatives of lung cancer patients. Br. J. Dis. Chest. 1984 Oct. 78(4), p. 388-91.

Kaiko, R.F., Wallenstein, S.L., Rogers, A.G., Grabinski, P.Y., Houde, R.W. Analgesic and mood effects of heroin and morphine in cancer patients with postoperative pain. N. Engl. J. Med. 1981 Jun 18, 304(25), p. 1501-05.

Kaiser, C.B. Hospice inpatient care. Characteristics of an institution and its patients. Conn. Med. 1984 Mar. 48(3) p. 146-51.

Kakinuma, R., Nishiwaki, Y., Yano, H., Kajita, M., Nishiyama, H., Kitaya, T., Matsuyama, T., Fukushima, J. (Experience with psychotropic agents Pyrethia and Contomin in the terminal care of lung cancer patients). Gan No Rinsho. 1984 Apr. 30(4), p. 344-8.

Kane, R.L., Klein, S.J., Bernstein, L., and Rothenberg, R. The role of hospice in reducing the impact of bereavement. Journal of Chronic Diseases. 1986, 39(9), pp. 735-742.

Kane, R. Lessons from hospice evaluations. The Hospice Journal, in press.

Kane, R.L., Bernstein, L., Wales, J., Rothenberg, R. Hospice effectiveness in controlling pain. JAMA, 253:18, May 10, 1985, pp. 2683-2686.

Kane, R.L., Klein, S.J., Bernstein, L., Rothenberg, R., Wales, J. Hospice role in alleviating the emotional stress of terminal patients and their families. Med. Care. 1985 Mar. 23(3), pp. 189-97.

Kane, R.L., Wales, J., Bernstein, L., Leibowitz, A., Kaplan, S. A randomized controlled trial of hospice care. Lancet, 1984 Apr 21, 1(8382), p. 890-4.

Kassakian, M.G., Bailey, L.R., Rinker, M., Stewart, C.A., Yates, J.W. The cost and quality of dying: a comparison of home and hospital. Nurse. Pract. 1979 Jan-Feb 4(1), p. 18-23.

Kastenbaum, R. Death, Society, and Human Experience. 2nd edition. St. Louis: C. B. Mosby, 1981.

Kastenbaum, R. Psychological death. In: L. Pearson (ed). Death and Dying: Current Issues in the Treatment of the Dying Person. Cleveland: Case Western University Press, 1969, pp. 1-27.

Kastenbaum, R. Toward standards of care for the terminally ill. Part I: What standards exist today? Omega, 1975. 6. pp. 289-290.

Kastenbaum, R., Aisenburg, R. The Psychology of Death. New York: Springer Publishing Co., Inc., 1972.

Kastenbaum, R.J. Death, Society and Human Experience. 1st edition. St. Louis: C. B. Mosby, 1977, 238 p.

Kastenbaum, R.J. Death, Society, and Human Experience. 3rd edition. St. Louis: C. B. Mosby, in press.

Katz, B.P., Zdeb, M.S., Therriault, G.D. Where People Die. Public Health Rep. 1979 Nov-Dec. 94(6), p. 522-527.

Kay, L.L. A cost analysis of three hospice programs: Hillhaven Hospice, Kaiser Permanente Hospice, Riverside Hospice. Executive summary. National Cancer Institute, 11 pp. 1981.

Keck V.E., Walther, L.S. Nurse encounters with dying and nondying patients. Nurs. Res. 1977 Nov-Dec. 26(6), p. 465-9.

Keen, L.M. A personal experience with AIDS. American Journal of Hospice Care. 1986 Mar./Apr.

Keller, C.D., Bell, H.K. The new hospice Medicare benefit. A brief and somewhat irreverent history, Postgrad-Med. 1984 Feb 1, 75(2), p. 71-3, 76, 81-2.

Kellogg Foundation. Annual Report. Battle Creek, MI: Author, 1984.

Kemp, B.J. The case management model of human service delivery. Annu. Rev. Rehabil. 1981, 2, pp. 212-238.

Kentucky Administrative Rules, Title 902, 20:140 (1982).

Kentucky Revised Statutes, §§216B.010-216B.990 (1980).

Kidder. D. (1) Appendix: Facility costs in National Hospice Study sites. In: National Hospice Study Final Report. Center for Health Care Research, Brown University, November 1984.

Kidder, D. (2) Impact of hospice on Medicare health care costs. In: Greer, D., Mor, V., and Kastenbaum, R. (eds). The Hospice Experiment: Is It Working? Baltimore, MD: Johns Hopkins University Press. In press.

Kidder, D., Coelen, C., Goodrich, N., Birnbaum, H. Chapter III. Hospice costs under the National Hospice Study demonstration. In: Final Report of the National Hospice Study. Center for Health Care Research, Brown University Program in Medicine, November 1984.

Kieffer, S.E. and Wakefield, D.S. The availability of primary caregivers: an emerging problem. Am. J. Hosp. Care. 1986 May/June, 3(3), pp. 14-18.

Kiyak, H.A., Kahana, E.F. Personal and job-related predictors of employee turnover in facilities for the elderly. Presented at annual meeting of the Gerontological Society, November 1983.

Kizer, K.W. et al. A quantitative analysis of Aids in California (Sacramento, California Department of Health Services, March 1986.

Kleiman, M.A., Mantell, J.E., Alexander, E.X. RX for social death: the cancer patient as counselor. Community Ment. Health J. 1977 Summer. 13(2), pp. 115-124.

Knowles, C.A. Reimbusements and the Medicare-certified hospice. Am. J. Hosp. Care. 1985 Sep/Oct, 2(5), pp. 15-21.

Koff, T.H., Hospice: A Caring Community. Cambridge, MA: Winthrop Publishers 1980.

Kohler, J.A. and Radford, M. Terminal care for children dying of cancer: quantity and quality of life. Br. Med. J. [Clin. Res.]. 1985 July, 291(6488), pp. 115-116.

Konior, G.S., Levine, A.S. The fear of dying: how patients and their doctors behave. Semin. Oncol. 1975 Dec. 2(4), p. 311-6.

Krakoff, I.H. The case for active treatment in patients with advanced cancer: not everyone needs a hospice. CA. 1979 Mar-Apr. 29(2), p. 108-11.

Krant, M.J. Hospice philosophy in late-state cancer care. JAMA. 1981 Mar 13, 245(10), p. 1061-2.

Krant, M.J., Beiser, M., Adler, G., Johnston, L. The role of a hospital-based psychosocial unit in terminal cancer illness and bereavement. J. Chronic Dis. 1976 Feb. 29(2), p. 115-27.

Krant, M.J., Johnston, L. Family members' perceptions of communications in late stage cancer. Int. J. Psychiatry Med. 1977-78, 8(2), p. 203-16.

Kron, J. Designing a better place to die. New York. 1976 Mar 1, pp. 43-49.

Krout, J. Knowledge and use of services by the elderly: a critical review of the literature. International Journal of Aging and Human Development 17:153-167, 1983.

Kubler-Ross, E. On Death and Dying. London: Tavistock, 1973.

Kubler-Ross, E. On Death and Dying. New York: MacMillan, 1969.

Kuhse, H. Euthanasia--again. "Letting die" is not in the patient's best interests: a case for active euthanasia. Med. J. Aust. May 27, 1985, 152(11), pp. 610-613.

Kurland, A.A. LSD in the supportive care of the terminally ill cancer patient. J. Psychoactive Drugs. 1985 Oct.-Dec., 17(4), pp. 279-290.

Kusserow, R.P. A program inspection on hospice care. DHHS. September 10, 1984.

Kutzen, H.S. Alternatives to hospitalization: AIDS hospice care. Journal of the Louisiana State Medical Society. September 1985, 137(9), pp. 59-61.

Kutzen, H.S. A community approach to AIDS through hospice. American Journal of Hospice Care. 1986 Mar./Apr., pp. 17-23.

LaGrand, L.E. Reducing burnout in the hospice and the death education movement. Death Educ. 1980 Spring, 4(1), p. 61-75.

Laliberte, L.L., Mor, V. An examination of the relationship of reimbursement and organizational structure to the use of hospice volunteers. Hospice J. 1985 Spring. 1(1), p. 21-44.

Lamb, D.H., de St. Aubin, T., and Foster, M. Characteristics of most effective and least effective hospice volunteers. Am. J. Hosp. Care. 1985 Sep./Oct., 2(5), pp. 42-45.

Lancet (editorial). Heroin for cancer: a great non-issue of our day. 1984 Jun 30, 1(8392), pp. 1449-50.

Landel, A.M., Hammond, W.G., Meguid, M.M. Aspects of amino acid and protein metabolism in cancer-bearing states. Cancer, 1985 Jan 1, 55(1 Suppl), p. 230-7, (Review).

Landesman, S.H., Ginzburg, H.M., and Weiss, S.H. The AIDS epidemic. N. Engl. J. Med. February 21, 1985, 312(8), pp. 521-525.

Lanoil, J. The chronic mentally ill in the community: case management models. Psychosocial. Rehabil. J. 1980, 4, pp. 1-6.

Lattanzi, M.E. Hospice bereavement services: creating networks of support. Fam. Community Health. 1982 Nov 5(3), p. 54-63.

Lattanzi, Marcia, Hale, Mary E. Giving grief words: writing during bereavement. Omega: Journal of Death & Dying. 1984-85 vol. 15(1) 45-52.

Lauer, M.E., Camitta, B.M. Home care for dying children: a nursing model. J. Pediatr. 1980 Dec. 97(6}, p. 1032-5.

Lauer, M.E., Mulhern, R.K., Wallskog, J.M., Camitta, B.M. A comparison study of parental adaptation following a child's death at home or in the hospital. Pediatrics, 1983 Jan. 71(1), p. 107-12.

Lavery, I.C., Steiger, E., Fazio, V.W. Home parenteral nutrition in management of patients with severe radiation enteritis. Dis. Colon Rectum. 1980 Mar. 23(2), p. 91-3.

Laws of New York of 1978, Chapter 718.

LeBaron, S. and Zeltzer, L.K. The role of imagery in the treatment of dying children and adolescents. J. Dev. Behav. Pediatr. 1985 Oct., pp. 252-258.

Leibel, R.L. Sounding board. Thanatology and medical economics. N. Engl. J. Med. 1977 Mar 3. 296(9), p. 511-3.

Leloudis, D. and Pole, L. Reasons for choosing hospice care. Am. J. Hosp. Care. 1985 Nov./Dec., 2(6), pp. 30-34.

Lenzer, A. Relationship of age, sex and ethnicity to place of death. Presentation at the 37th Annual Scientific Meeting of the Gerontological Society of America. San Antonio, TX, Nov 17, 1984.

Levinson, A.J. Rock. Case studies: "If I have AIDS, then let me die now!" Commentary. Hastings Center Report, February 1984, p. 25.

Levitan, A.A. Hypnotic death rehearsal. Am. J. Clin. Hypn. 1985 Apr., 27(4), pp. 211-215.

Levy, M.H. Pain management in advanced cancer. Seminars in Oncology. 1985 Dec., pp. 394-410.

Levy, N.H. and Catalano, R.B. Control of common physical symptoms other than pain in patients with terminal disease. Seminars in Oncology. 1985 Dec., 12(4), pp. 411-430. (REVIEW).

Levy, R.M., Bredesen, D.E., and Rosenblum, M.L. Neurological manifestations of the acquired immunodeficiency syndrome (AIDS): experience at UCSF and review of the literature. J. Neurosurg. April 1985, 62, pp. 475-495.

Lieberman, M.A., Borman, L.D. Researchers study THEOS; report group's effect big help to members. THEOS. 1981, 20, pp. 3-6.

Liegner, L.M. St. Christopher's Hospice, 1974. Care of the dying patient. JAMA. 1975 Dec 8, 234(10), p. 1047-8.

Lillard, J., Lotspeich, P., Gurich, J., and Hesse, J. Acquired immunodeficiency syndrome (AIDS) in home care: maximizing helpfulness and minimizing hysteria. Home Healthcare Nurse. 1984 Nov./Dec., pp. 11-16.

Lim, S.T., Choa, R.G., Lam, K.H., Wong, J., Ong, G.B. Total parenteral nutrition versus gastrostomy in the preoperative preparation of patients with carcinoma of the oesophagus. Br. J. Surg. 1981 Feb. 68(2), p. 69-72.

Limberg, M. Case study of Hospice St. John: a project sponsored by the Lutheran Welfare Service of Northeastern Pennsylvania, Inc., Wilkes Barre, Pennsylvania. Community Research Applications, Inc. March 1980.

Lindemann, E. The symptomatology and management of acute grief. Am. J. Psychiatry, 1944, 101, pp. 141-148.

Lindheim, R. Birthing centers and hospices: reclaiming birth and death. Annu. Rev. Public Health. 1981, 2, p. 1-29.

Linn, B.S., Linn, M.W. Late stage cancer patients: age differences in their psychophysical status and response to counseling. J. Gerontol. 1981 Nov. 36(6), p. 689-92.

Linn, M.W., Linn, B.S., Harris, R. Effects of counseling for late stage cancer patients. Cancer, 1982 Mar 1, 49(5), pp. 1048-1055.

Linn, M.W., Linn, B.S., Stein, S. Impact on nursing home staff of training about death and dying. JAMA. 1983 Nov 4, 250(17), p. 2332-5.

Linn, M.W., Linn, B.S., Stein, S.R. Beliefs about causes of cancer in cancer patients. Soc. Sci. Med. 1982, 16(7), p. 835-9.

Lipman, A.G. Drug therapy in cancer pain. Cancer Nurs. 1980 Feb., p. 39-46.

Liss-Levinson, W.S. Reality perspectives for psychological services in a hospice program. Am. Psychol. 1982 Nov. 37(11), p. 1266-70.

Lo, B., Jonsen, A.R. Clinical decisions to limit treatment. Ann. Intern. Med. 1980 Nov. 93(5), p. 764-8.

Loiudice, T.A., Lang, J.A. Treatment of radiation enteritis: a comparison study. Am. J. Gastroenterol. 1983 Aug 78(8), p. 481-7.

Long, S.H., Gibbs, J.O., Crozier, J.P., Cooper, D.I., Jr., Newman, J.F., Jr., Larsen, A.M. Medical expenditures of terminal cancer patients during the last year of life. Inquiry. 1984 Winter, 21(4), p. 315-27.

Lubitz, J., Gornick, M., Prihoda, R. Use and costs of Medicare services in the last year of life. DHHS/HCFA Office of Research, Demonstrations, and Statistics. 1981, Sep 21, 31 pp.

Lubitz, J., Prihoda, R. The use and costs of Medicare services in the last 2 years of life. Health Care Financ. Rev. 1984 Spring 5(3), p. 117-31.

Lunt, B. Terminal cancer care services: recent changes in regional inequalities in Great Britain. Soc. Sci. Med. 1985, 20(7), pp. 753-759.

Lunt, B., Hillier, R. Terminal care: present services and future priorities. Br. Med. J. (Clin. Res.). Aug 29, 283(6291), p. 595-8.

Lusby, G.I. AIDS: the impact on the health care worker. Front. Radiat. Onc. 1985, 19, pp. 164-167.

Lusby, G., Martin, J.P., and Schietinger, H. Infection control at home. American Journal of Hospice Care. 1986 Mar.Apr., pp. 24-27.

Maayan, S., Wormser, G.P., Hewlett, D., Miller, S.N., Duncanson, F.P., Rodriguez, A., Perla, E.N., Koppel, B., and Rieber, E.E. Acquired immunodeficiency syndrome (AIDS) in an economically disadvantaged population. Arch. Intern. Med. September 1985, 145, pp. 1607-1612.

Maisami, M., Sohmer, B.HH., and Coyle, J.T. Combined use of tricyclic antidepressants and neuroleptics in the management of terminally ill children: a report on three cases. J. Am. Acad. Child Psychiatry. 1985 Jul., 24(4), pp. 487-489.

Malden, L.T., Sutherland, C., Tattersall, M.H., Morgan, J., Forsyth, S., Levi, J.A., Gunz, F.W. Dying of cancer. Factors influencing the place of death of patients. Med. J. Aug 4, 1984, 141(3), p. 147-50.

Mantell, J.W., Ell, K.O. Hospice volunteer programs: a proposed agenda. Hospice J. 1985 Spring, 1(1), p. 85-101.

Margolis, C.G. Hypnotic interventions for pain management. Int. J. Psychosom. 1985, 32(3), pp. 12-19.

Martin, J.P. The AIDS home care and hospice program. American Journal of Hospice Care. 1986 Mar./Apr., pp. 35-37.

Martin, L.B., Collier, P.A. Attitudes toward death: a survey of nursing students. J. Nurs. Educ. 1975 Jan, 14(1), p. 28-35.

Martin, M.C. Hospice care update: many questions still to be answered. Hospitals. 1981 May 16, 55(10), p. 56-60.

Marwick, C. Medical news: task force formed to coordinate study, testing of AIDS therapies. JAMA. March 14, 1986, 255(10), pp. 1233-1242.

Maryland Administrative Rules 10.07.14.01 - 10.07.14-19 (1982).

Maslach, C. Burned out. Hum. Behav. 1976, 5(9), pp. 16-22.

Maslach, C., Jackson, S.E. Burnout in health professions: a social psychological analysis. In: Social Psychology of Health and Illness. G. Sanders and J. Suls, eds. Hillsdale, NJ: Lawrence Erlbaum, 1982.

Masterson-Allen, S., Mor, V., and Laliberte, L. Turnover in National Hospice Study sites: a reflection of organizational growth. The Hospice Journal, in press, 1986.

Masterson-Allen, S., Mor, V., Laliberte, L., Monteiro, L. Staff burnout in a hospice setting. Hospice J, 1985. In press.

Mathew, L.M., Jahnigen, D.W., Scully, J.H., Rempel, P., Meyer, T.J., LaForce, F.M. Attitudes of house officers toward a hospice on a medical service. J. Med. Educ., 1983 Oct. 58(10), p. 772-7.

Mawson, D., Marks, I.M., Ramm, L., Stern, R.S. Guided mourning for morbid grief: a controlled study. Br. J. Psychiatry, 1981 Mar. 138, p. 185-93.

McCall, N. Utilization and costs of Medicare services by beneficiaries in their last year of life. Med. Care, 1984 April, 22(4), pp. 329-342.

McCann, B. JCAH hospice project: proposed standards. Caring, 1983 Jun., 2(6), p. 15-7.

McCann, B.A. The Hospice Project Report. Chicago: Joint Commission on Accreditation of Hospitals, 1985.

McCorkle, R., Benoliel, J.Q. Cancer patient responses to psychosocial variables. School of Nursing, University of Washington, 1981.

McCusker, J. and Stoddard, A.M. Effect of an expanding home care program upon use of health services and costs of care among Blue Cross enrollees with terminal cancer in Rochester, New York, 1976-1982. 1986. Unpublished Manuscript.

McCusker, J. Development of scales to measure satisfaction and preferences regarding long-term and terminal care. Med. Care 1984 May, 22(5), p. 476-93.

McCusker, J. Where cancer patients die: an epidemiologic study. Public Health Rep., 1983 Mar-Apr., 98(2), p. 170-6.

McCusker, J., Brudevold, C. Health services utilization and costs of care in terminal cancer: implications for hospice programs. Home Health Care Service Q., 1984 Summer, 5(2), p. 61-74.

McGivney, W.T., Crooks, G.M. The care of patients with severe chronic pain in terminal illness. JAMA, 1984 Mar 2, 251(9), p. 1182-8.

McKegney, F.P., Bailey, L.R., Yates, J.W. Prediction and management of pain in patients with advanced cancer. Gen. Hosp. Psychiatry, 1981 Jun., 3(2), p. 95-101.

McLaughlin, S.T. Avoiding common hospice pitfalls. Caring, 1983 Jun., 2(6), p. 18-9.

Mechanic, D., Aiken, L.H. A cooperative agenda for medicine and nursing. N. Engl. J. Med., 1982, 307(12), pp. 747-750.

Melbye, M., Biggar, R.J., Ebbesen, P., Neuland, C., Goedert, J.J., Faber, V., Lorenzen, I., Skinhoj, P., Gallo, R.C., and Blattner, W.A. Long-term seropositivity for human T-lymphotropic virus type III in homosexual men without the acquired immunodeficiency syndrome: development of immunologic and clinical abnormalities; a longitudinal study. Annals of Internal Medicine. 1986, 104, pp. 496-500.

Melson, S.J., Rynearson, E.K. Unresolved bereavement: medical reenactment of a loved one's terminal illness. Postgrad. Med., 1982 Jul., 72(1), p. 172-9.

Melzack, R., Ofiesh, J.G., Mount, B.M. The Brompton mixture: effects on pain in cancer patients. Can. Med. Assoc. J., 1976, 115, pp. 125-129.

Metchnikoff, E. (trans. by Mitchell, P.C.). The Nature of Man. New York & London: G.P. Putnam & Sons, 1910.

Meyers, A.R., Master, R.J., Kirk, E.M., Jorgenson, C., Mucatel, M. Integrated care for the terminally ill: variations in the utilization of formal services. Gerontologist, 1983 Feb., 23(1), p. 71-4.

Micetich, K.C., Steinecker, P.H., Thomasma, D.C. Are intravenous fluids morally required for a dying patient? Arch. Intern. Med., 1983 May, 143(5), p. 975-8.

Michielutte, R., Patterson, R.B., Herndon, A. Evaluation of a home visitation program for families of children with cancer. Am. J. Pediatr. Hematol. Oncol., 1981 Fall, 3(3), p. 239-45.

Michigan Department of Public Health, Bureau of Health Facilities, R325.13101 - R325.13417 (1984).

Michigan Statutes Annotated §§14.15 (21401) - 14.15 (21421) (1980, 1984 amendments).

Milch, R.A., Freeman, A., Clark, E. Palliative Pain and Symptom Management for Children and Adolescents. Alexandria, VA: Children's Hospice International, 1985, 29 pp.

Miles, S.H. The terminally ill elderly: dealing with the ethics of feeding. Geriatrics. 1985 May, 40(5), p. 112, 115, 118-120.

Miller, A. and Lo, B. How do doctors discuss do-not-resuscitate orders? West. J. Med. 1985 Aug., 143(2), pp. 256-258.

Miller, D. and Green, J. Psychological support and counselling for patients with acquired immune deficiency syndrome (AIDS). Genitourin. Med. 1985, 61, pp. 273-278.

Miller, S.C. Documentation in the hospice medical record--survey results. Part I. J. Am. Med. Rec. Assoc., 1983 Nov., 54(11), p. 17-24.

Miller, S.C. Medical record-related practices in hospices--survey results. J. Am. Med. Rec. Assoc., 1983 Dec., 54(12), p. 23-9.

Mills, D.H. California's natural death act. J. Leg. Med., 1977 Jan., 5(1), p. 22-3.

Mishkin, B. Decisions concerning the terminally ill: how to protect patients, staff and the hospital. Healthspan. 1985 Mar., 2(3), pp. 17-21.

Missouri 83rd General Assembly, House Bill No. 312 (1984).

Mitchell-Heggs, P., Murphy, K., Minty, K. Diazepam in the treatment of dyspnoea in the "pink puffer" syndrome. Q. J. Med., 1980, pp. 9-20.

MMWR. Epidemiologic notes and reports: apparent transmission of human T-lymphotropic virus type III/lymphadenopathy-associated virus from a child to a mother providing health care. February 7, 1986, 35(5), pp. 76-79.

Moga, D.N. The hospice equation. Bus. Health. 1985 Jun., 2(7), pps. 7-11.

Moldow, D.G., Armstrong, G.D., Henry, W.F., Martinson, I.M. The cost of home care for dying children. Med. Care, 1982 Nov., 20(11), p. 1154-60.

Moldow, D.G., Martinson, I.M. Home Care for Seriously Ill Children: A Manual for Parents. Alexandria, VA: Children's Hospice International, 1984. 92 pp.

Mor, V., Masterson-Allen, S. and Kaufman, R. Evaluation of Rhode Island's Colorectal Health Check Campaign. Final Report. Providence, RI: Brown University, Center for Health Care Research, 1986.

Mor, V., et al. Hospice Care: A Comprehensive Review of the Literature. Providence, RI: Brown University, 1985.

Mor, V. Hospice Care Systems: Structure, Process, Costs, and Outcome. New York, NY: Springer Publishing Company, in press.

Mor, V., D.S. Greer and R. Kastenbaum (eds.) The Hospice Experiment, Baltimore, Johns Hopkins University Press, 1988.

Mor, V., Birnbaum, H. Medicare legislation for hospice care: implications of National Hospice Study data. Health. Aff. (Millwood), 1983 Summer, 2(2), pp. 80-90.

Mor, V., Hiris, J. Determinants of site of death among hospice cancer patients. J. Health Soc. Behav., 1983 Dec., 24(4), p. 375-85.

Mor, V., Kidder, D. Cost Savings in Hospice: Final Results of the National Hospice Study. Health Services Research 20(4):407-422, October 1985.

Mor, V., Laliberte, L. Burnout among hospice staff. Health. Soc. Work, 1984 Fall, 9(4), p. 274-83.

Mor, V., Laliberte, L. Roles ascribed to volunteers. An examination of different types of hospice organizations. Eval. Health. Prof., 1983 Dec., 6(4), p. 453-64.

Mor, V., Laliberte, L., Kidder, D., Sherwood, C., Sherwood, S., Morris, J.N. Alternate Hospice Reimbursement Systems Analyses. Brown University, HCFA Cooperative Agreement #99-D-97793, August 1985.

Mor, V., McHorney, C., Sherwood, S. Secondary morbidity among the recently bereaved. Unpublished report. Center for Health Care Research, Brown University, 1985.

Mor, V., Monteiro, L., Laliberte, L. Personal and organizational factors as predictors of burnout among hospice nurses. Presented at the 112th Annual Meeting of the American Public Health Association in Anaheim, CA, November 1984.

Mor, V., Schwartz, R., Laliberte, L., Hiris, J. An examination of the effect of reimbursement and organizational structure on the allocation of hospice staff time. Home Health Care Services Q. In press.

Mor, V., Wachtel, T.J., Kidder, D. Patient predictors of hospice choice: hospital versus home care based programs. Med. Care, 1985 Sept. In press.

Morgan, Norma C. Trufant. An Economic Analysis of Selected Hospice Programs. University of Nebraska--Lincoln, Ph.D., 1982. 173 pp.

Morris, J.N., Mor, V., Goldberg, R.J., Sherwood, S., Greer, D.S., Hiris, J. The effect of treatment setting and patient characteristics on pain in terminal cancer patients: a report from the National Hospice Study. J. Chronic Dis. In press.

Morris, J.N., Suizza, S., Sherwood, S., Wright, S.M., Greer, D. LAST DAYS: A study of the quality of life of terminally ill cancer patients. J. Chronic Dis. In press.

Moser, D.H., Krikorian, D.A. Satisfaction and stress incidents reported by hospice nurses: a pilot study. Nurs. Leadersh., 1982 Dec., 5(4), p. 9-17.

Moskowitz, L., Hensley, G.T., Chan, J.C., and Adams, K. Immediate cause of death in acquired immunodeficiency syndrome. Arch. Pathol. Lab. Med. August 1985, 109, pp. 735-738.

Mount, B.M. Hospice care (editorial). J. R. Soc. Med., 1980 Jul., 73(7), p. 471-3.

Mount, B.M. Psychological impact of urologic cancer. Cancer, 1980 Apr. (suppl), 45, p. 1985-1992.

Mount, B.M. The problem of caring for the dying in a general hospital; the palliative care unit as a possible solution. Can. Med. Assoc. J., 1976 Jul. 17, 115(2), p. 119-21.

Mount, B.M., Scott, J.F. Whither hospice evaluation. J. Chronic Dis., 1983, 36(11), p. 731-6.

Mudd, P. High ideals and hard cases: the evolution of a hospice. Hastings Cent. Rep., 1982 Apr., 12(2), p. 11-4.

Muldary, T.W. Burnout and Health Professionals: Manifestations and Management. Norwalk, CT: Appleton-Century-Crofts, 1983.

Mulhern, R.K., Lauer, M.E., Hoffmann, R.G. Death of a child at home or in the hospital: subsequent psychological adjustment of the family. Pediatrics, 1983 May, 71(5), p. 743-7.

Mullen, J.L., Buzby, G.P., Gertner, M.H., Stein, T.P., Hargrove, W.C., Oram-Smith, J., Rosato, E.F. Protein synthesis dynamics in human gastrointestinal malignancies. Surgery, 1980 Mar., 87(3), p. 331-8.

Muller, J.M., Keller, H.W., Brenner, U., Walter, M. (Metabolic consequences of parenteral nutrition in tumor patients). Leber. Magen. Darm., 1984 Mar., 14(2), p. 68-77.

Murphy, D.H. Update: relieving the pain of cancer. Am. Pharm., 1984 May, NS24(5), p. 66-71.

Murphy, P. Pastoral care and persons with AIDS. American Journal of Hospice Care. 1986 Mar./Apr., pp. 38-40.

Mushkin, S.J. Terminal illness and incentives for health care use. In: Consumer Incentives for Health Care, (New York: Prodist Publishing Company, 1974).

Muurinen, J.M. The Economics of Informal Care in the National Hospice Study: An Analysis of Labor Market Related Effects of the Burden of Informal Care. Brown University, 1985, unpublished.

Narkiewicz, R.D. A study of hospice costs for non-Medicare age group. Results show significant savings during last month of life. Am. J. Hosp. Care. 1986 Jan./Feb., 3(1), pp. 12-16.

National Hospice Legislation approved. 1986 April. NHO Hospice News, 4(4), p. 1.

National Hospice Organization. The 1986 guide to the nation's hospices. 1986. Arlington, VA.

National Hospice Organization (NHO). Profile of hospices in U.S.: NHO testifies before U.S. health data committee. NHO Hospice News, 1985 Jan., 3(1), p. 3.

Naylor, David Blair. Quality of Life as an Outcome of Hospice Care. University of Akron Ph.D., 1983, 239 pp.

Neu, S. and Kjellstrand, C.M. Stopping long-term dialysis. An empirical study of withdrawal of life-supporting treatment. N. Engl. J. Med. January 2, 1986, 314(1), pp. 14-20.

Nevada Revised Statutes §449.0115 (1979).

New Mexico Health and Environmental Department Rules HED-83-9-100 - HED-83-9-714 (1983).

New Mexico Statutes Annotated §§24-1-1 - 24-1-21 (1983).

New York Assembly Bill 6157-A (March 21, 1985).

New York Public Health Law §§4000-4012 (Consolidated Laws Services).

New York Times. Article on AIDS. Friday, April 18, 1986, p. A19.

Nichols, S.E. Psychosocial reactions of persons with the acquired immunodeficiency syndrome. Ann. Int. Med. 1985, 103, pp. 765-767.

Nixon, D.W., Lawson, D.H., Kutner, M.H., Moffitt, S.D., Ansley, J., Heymsfield, S.B., Lynn, M.J., Wesley, M., Yancey, R., Rudman, D. Effect of

total parenteral nutrition on survival in advanced colon cancer. Cancer Detec. Prev., 1981, 4(1-4), p. 421-7.

Nobler, M.P. Pulmonary irradiation for Kaposi's sarcoma in AIDS. Am. J. Clin. Oncol. (CCT). 1985, 8, pp. 441-444.

Norberg, A., Norberg, B., Gippert, H., Bexell, G. Ethical conflicts in long-term care of the aged: nutritional problems and the patient-care worker relationship. Br. Med. J., 1980 Feb. 9, 280(6211), p. 377-8.

Nordlicht, S. Hospice: maintaining the dignity of life. Bull. NY Acad. Med., 1982 Oct., 58(7), p. 636-9.

Norman, C. AIDS trends: projections from limited data. Science. November 29, 1985, 230, pp. 1018-1021.

Noyes, R. Jr., Clancy, J. The dying role: its relevance to improved patient care. Psychiatry, 1977 Feb., 40(1), p. 41-7.

Noyes, R. Jr., Jochimsen, P.R., Travis, T.A. The changing attitudes of physicians toward prolonging life. J. Am. Geriatr. Soc., 1977 Oct., 25(10), p. 470-4.

Oken, D. What to tell cancer patients. JAMA, 1961, 175, pp. 86-94.

Oregon Laws of 1979, Chapter 563, HB2807.

Osborn, J.E. The AIDS epidemic: multidisciplinary trouble. N. Engl. J. Med. March 20, 1986, 314(12), pp. 779-782.

Oster, M.W., Vizel, M., Turgeon, L.R. Pain of terminal cancer patients. Arch. Intern. Med., 1978 Dec., 138, p. 1801-02.

Osterweis, M., Champagne, D.S. The U.S. hospice movement: issues in development. Am. J. Public Health, 1979 May, 69(5), p. 492-6.

Osterweis, M., Solomon, F., Green, M. eds. Bereavement: Reactions, Consequences, and Care. Washington, DC: National Academy Press, 1984. 309 pp.

Owen, Gregory Mark. Care for the Dying. A Study of the Need for Hospice. University of Minnesota, Ph.D., 1982. 296 pp.

Pannuti, F., Cricca, A., Marraro, D., Rossi, A.P., Fruet, F., Casadio, M. (Medical therapy of pain in oncology). Minerva Med., 1984 Jun 8, 75(24), p. 1451-61.

Paradis, L.F. Hospice program integration: an issue for policymakers. Death Educ. 1984, 8(5-6), p. 383-98.

Paradis, Lenora Toby Finn. The Integration of Hospice Programs into the Traditional Health Care System. A Sociological Study. Michigan State University, Ph.D., 1983. 266 pp.

Parkes, C.M. Effects of bereavement on physical and mental health--a study of the medical records of widows. Br. Med. J., 1964 Aug 1, 2, p. 274-79.

Parkes, C.M. Home or hospital? Terminal care as seen by surviving spouses. J. R. Coll. Gen. Pract., 1978 Jan., 28(186), p. 19-30.

Parkes, C.M. Terminal care: home, hospital or hospice? Lancet. 1:8421, January 19, 1985, pp. 155-156.

Parkes, C.M. The emotional impact of cancer on patients and their families. J. Laryngol. Otol., 1975 Dec., 89(12), p. 1271-9.

Parkes, C.M. The first year of bereavement: A longitudinal study of the reaction of London widows to the death of their husbands. Psychiatry, 1970 Nov., 33(4), p. 444-67.

Parkes, C.M. (1979a). Terminal care: evaluation of in-patient service at St. Christopher's Hospice. Part I. Views of surviving spouse on effects of the service on the patient. Postgrad. Med. J., 1979 Sep., 55(646), p. 517-22.

Parkes, C.M. (1979b). Terminal care: evaluation of in-patient service at St. Christopher's Hospice. Part II. Self assessments of effects of the service on surviving spouses. Postgrad. Med. J., 1979 Sep., 55(646), p. 523-7.

Parkes, C.M., Parkes, J. "Hospice" versus "hospital" care--re-evaluation after 10 years as seen by surviving spouses. Postgrad. Med. J., 1984 Feb., 60(700), p. 120-4.

Parkes, C.M. (1980a). Terminal care: evaluation of an advisory domiciliary service at St. Christopher's Hospice. Postgrad. Med. J., 1980 Oct., 56(660), pp. 685-689.

Parkes, C.M. (1980b). Bereavement counselling: does it work? Br. Med. J., 1980 Jul 5, p. 3-6.

Parkes, C. Murray. Unexpected and untimely bereavement: a statistical study of young Boston widows and widowers. In: Schoenberg, B. Bereavement: Its Psychosocial Aspects. New York, NY: Columbia University Press, 1975. 375 pp. (pp. 119-138).

Parkes, Colin M. Evaluation of a bereavement service. Journal of Prevention Psychiatry, 1981, 1(2), pp. 179-188.

Pattison, E.M. The Experience of Dying. New York: Prentiss-Hall, 1977.

Pauly, M. Economic Aspects of Consumer Use. In J.B. McKinley (Ed.), Health Care Consumers, Professionals and Organizations. Cambridge, MA: MIT Press, pp. 56-87, 1981.

Perry, S.W. and Tross, S. Psychiatric problems of AIDS inpatients at the New York Hospital: preliminary report. Public Health Reports. 1984 Mar./Apr., 99(2), pp. 200-205.

Peterman, T.A., Drotman, D.P., and Curran, J.W. Epidemiology of the Acquired Immunodeficiency Syndrome (AIDS): Epidemiologic reviews. 1985, 7, pp. 1-16.

Petrosino, B.M. Characteristics of hospice patients, primary caregivers and nursing care problems: foundation for future research. Hospice J., 1985 Spring, 1(1), p. 3-19.

Pfefferbaum, Levine B., Kumor, J., Cangir, A. et al. Tricyclic antidepressants for children with cancer. Am. J. Psychiatry, 1983, 140, pp. 1074-1076.

Piro, P.A., Lutins, T. Utilization and reimbursements under Medicare for persons who died in 1967 and 1968. Washington: U.S. Department of Health, Education, and Welfare (publ. no. SSA-74-11702). 1973.

Platman, S.R., Dorgan, R.E., Gerhard, R.S., Mallam, K.E., Spiliadis, S.S. Case management of the mentally disabled. J. Public Health Policy, 1982, 3, pp. 302-314.

Polak, P.R., Egan, D., Lee, J.H., Vandenbergh, R.H., Williams, W.V. Prevention in mental health: a controlled study. Am. J. Psychiatry, 1975, 132, pp. 146-149.

Potter, J.R. A challenge for the hospice movement. N. Engl. J. Med., 1980 Jan 3, 302(1), p. 53-5.

Preodor, M., Owen-Still, S. Care of the terminally ill (letter). N. Engl. J. Med., 1984 Apr 26, 310(17), p. 1127.

Price, D.M., Murphy, P.A. Staff burnout in the perspective of grief theory. Death Educ., 1984 Spring, 8(1), p. 47-58.

Quadland, M. In: Enlow, R. moderator: Public response and public health: scientific, social, and political interdigitations. Special Session. Ann. NY Acad. Sci. 1984, 437, pp. 290-311.

Quinn, A. Features of a selected group of Canadian patients with AIDS. Can. Med. Assoc. J. November 1, 1985, pp. 890-891.

Quinn, J.L. Triage: coordinated home care for the elderly. Nurs. Outlook, 1975, 23, pp. 570-573.

Quinn, T.C. Editorials: perspectives on the future of AIDS. JAMA. January 11, 1985, 253(2), pp. 247-249.

Raber, P.E. Ethical and legal problems of living wills. Geriatrics, 1980 Aug., 35(8), p. 27-8, 30.

Raphael, B. Preventive intervention with the recently bereaved. Arch. Gen. Psychiatry, 1977, 34, pp. 1450-1454.

Rea, M.P., Greenspoon, S., Spilka, B. Physicians and the terminal patient: some selected attitudes and behavior. Omega, 1975, 6(4), p. 291-302.

Reed, A.W. Clinical notes. The image of the hospice chaplain. Hospice J., 1985 Spring, 1(1), p. 111-18.

Reuben, D., Mor, V. Nausea and vomiting in terminal cancer patients: epidemiology and physician response to symptoms. Submitted for publication. Center for Health Care Research, Brown University, 1985.

Reuben, D.B., Mor, V. Dyspnea in terminal cancer patients. Chest. In press.

Revised Codes of Montana Annotated §§50-5-101 - 50-5-211 (1983).

Revised Code of Washington Annotated §§70.126.001-70.126.050, §48.21.220, §48.44.320 (1983, 1984).

Rhode Island Department of Health, Rules and Regulations for Licensing Hospice Care §R23-17-HPC (1984).

Rivin, B.E., Monroe, J.M., Hubschman, B.P. et al. AIDS outcome: a first followup. NEJM. 1984, 311, p. 857.

Robbins, D.A. Legal and Ethical Issues in Cancer Care in the United States. Springfield, IL: Charles C. Thomas, 1983.

Robinson, L. Acquired immunodeficiency syndrome (AIDS)--an update. Critical Care Nurse. 1984 Sept./Oct., pp. 75-83.

Robitscher, J.B. The right to die. Hastings Cent. Rep., 1972 Sep., 2(4), p. 11-4.

Rogers, W.F., Clarke, C., Whitfield, A.G. Hospice planning in North Staffordshire. J. R. Coll. Physicians Lond., 1981 Jan., 15(1), p. 25-7.

Rosner, F., Shapiro, S., Bernard, L., and Howard, F. Psychological care team for patients with AIDS in a municipal hospital. JAMA. April 26, 1985, 253(16), p. 2361.

Ruhnau, K.J., Steinbach, G. (Helping to die--helping to live in the boundary between life and death). Z. Gesamte. Inn. Med., 1984 Nov 15, 39(22), p. 556-8.

Rules of Georgia Department of Human Resources, Chapter 250-5-43 (1984).

Russell, Glenda Marie. Hospice Programs and the Hospice Movement: An Investigation Based on General Systems Theory. University of Colorado--Boulder, Ph.D., 1984. 195 pp.

Ryder, C.F., Ross, D.M. Terminal care--issues and alternatives. Public Health Rep., 1977 Jan-Feb, 92(1), p. 20-9.

Sardi, P.A. (The psychosocial protection of the terminal patient). Minerva Med., 1981 Dec 22, 72(51), p. 3543-6.

Saunders, C. Hospice care. Am. J. Med., 1978 Nov., 65(5), p. 726-8.

Saunders, C. Principles of symptom control in terminal care. Med. Clin. North Am., 1982 Sep., 66(5), p. 1169-83.

Saunders, C.M. The hospice: its meaning to patients and their physicians. Hosp. Pract., 1981 Jun., 16(6), pp. 93-108.

Schmale, A.H., Morrow, G.R., Schmitt, G.H. et al. Well-being of cancer survivors. Psychosom. Med., 1983.

Schoen, K. Psychosocial aspects of hospice care for AIDS patients. American Journal of Hospice Care. 1986 Mar./Apr., pp. 32-34.

Schultz, H. (The dignity of the patient: a legal problem?). Bull. Schweiz. Akad. Med. Wiss., 1980 Nov., 36(4-6), p. 323-32.

Schulz, R., Aderman, D. Clinical research and the stages of dying. Omega, 1974, 5, pp. 137-144.

Schulz, R., Aderman, D. How the medical staff copes with dying patients: a critical review. Omega, 1976, 7(1), p. 11-21.

Scitovsky, A.A. "The Economic Impact of AIDS." Health Affairs. 7:4. Fall, 1988. 32-45.

Scitovsky, A.A. "The high cost of dying:" what do the data show?. Milbank Mem. Fund Q., 1984 fall, 62(4), p. 591-608.

Scitovsky, A.A. and D.P. Rice. "Estimates of the direct and indirects costs of Acquired Immunodeficiency Syndrome in the United States, 1985, 1986 and 1991." Public Health Reports (January-February 1987, 5-17.

Session Laws of Colorado, H.B. 1247 as amended (1984).

Shahoda, T., Lashley, T., Firshein, J. Insurers: watchful but not worried. Juanuary 5, 1986, 60(1), p. 58.

Shanfield, S.B., Benjamin, A.H., Swain, B.J. Parents' reactions to the death of an adult child from cancer. Am. J. Psychiatry, 1984 Sep., 141(9), p. 1092-4.

Shapiro, E. Impending death and the use of hospitals by the elderly. J. Am. Geriatr. Soc., 1983 Jun., 31(6), p. 348-51.

Shedd, D.P., Carl, A., Shedd, C. Problems of terminal head and neck cancer patients. Head Neck Surg., 1980 Jul-Aug, 2(6), p. 476-82.

Sheldon, A., Ryser, C.P., Krant, M.J. An integrated family oriented cancer care program: the report of a pilot project in the socio-emotional management of chronic disease. J. Chronic Dis., 1970, 22, pp. 743-755.

Sherwood, S., Morris, J.N., Kastenbaum, R., Wright, S. Bereavement among hospice families. In: Greer, D., Mor, V., Kastenbaum, R. (eds.) The Hospice Experiment: Is It Working? Baltimore, MD: Johns Hopkins University Press. In press.

Shimm, D.S., Logue, D.L., Maltbie, A.A., Dugan S. Medical management of chronic cancer pain. JAMA, 1979 Jun 1, 241, p. 2408-12.

Shneidman, E.S. Voices of Death. New York: Harper and Row, Publishers, 1980.

Silver, S. Evaluation of a hospice program: effects on terminally ill patients and their families. Eval. Health Prof., 1981 Sep., 4(3), p. 306-15.

Silverstein, N. Informing the Elderly About Public Services: The Relationship Between Sources of Knowledge and Service Utilization. The Gerontologist, 24:37-40, 1984.

Skeen, W.F. Acquired immunodeficiency syndrome and the emergency physician. Ann. Emergency Med. 1985 Mar., 14, pp. 267-273.

Smith, D.H. Fatal choices: recent discussions of dying. Hastings Cent. Rep., 1977 Apr., 7(2), p. 8-10.

Smith, D.H., Granbois, J.A. The American way of hospice. Hastings Cent. Rep., 1982 Apr., 12(2), p. 8-10.

Smith, R.A., Wallston, B.S., Wallston, K.A., Forsberg, P.R., King, J.E. Measuring desire for control of health care processes. J. Pers. Soc. Psychol., 1984 Aug., 47(2), p. 415-26.

Smith, S.A. and Veglia, J.M. Hospital utilization of laboratory tests, procedures, and special therapies. Am. J. Hosp. Care. 1986 May/Jun, 3(3), pp. 33-36.

Smith S.A.N. and Veglia, J. Cost analysis of hospice utilization of certain hospital services. Wilkes-Barre, PA: Veterans' Administration Medical Center, 1986.

Smyser, A.A. Hospices. Their humanistic and economic value. Am. Psychol., 1982 Nov., 37(11), p. 1260-2.

Sorkin, E.M., Ogawa, G.S. Cimetidine potentiation of narcotic action. Drug. Intelligence Clin. Pharm., 1983, 17, pp. 60-61.

South Carolina Department of Health and Environmental Control Regulation No. 61-78 §§100-601 (1984).

Spector, W.D., Mor, V. Utilization and charges for terminal cancer patients in Rhode Island. Inquiry, 1984 Winter, 21(4), p. 328-37.

Spiegel, D., Bloom, J.R., Yalom, I. Group support for patients with metastatic cancer. A randomized outcome study. Arch. Gen. Psychiatry, 1981 May, 38(5), p. 527-33.

Spitzer, W.O., Dobson, A.J., Hall, J., Chesterman, E., Levi, J., Shepherd, R., Catchlove, B. Measuring the quality of life of cancer patients: a concise QL index for use by physicians. J. Chronic Dis., 1981, 34, pp. 585-597.

Spooner, D.P. A British perspective on hospice. The development, planning, and inception of a program. Am. J. Hosp. Care. 1986 Jan./Feb., 3(1), pp. 4-40.

Stamps, P.L., Finkelstein, J.B. Statistical analysis of an attitude scale to measure patient satisfaction with medical care. Med. Care, 1981, 19(11), pp. 1108-1135.

State hospice requirements. NHO Hospice News, February 1986, 4(2), p. 3.

Stedeford, A. Couples facing death. I-Psychosocial aspects. Br. Med. J. (Clin Res)., 1981 Oct 17, 283(6298), p. 1033-6.

Steinbach, G., Ruhnau, K.J. (What attitude to dying do we have today?). Z. Gesamte. Inn. Med., 1984 Nov 15, 39(22), p. 553-4.

Steinberg, R.M., Carter, G.W. Case Management and the Elderly: A Handbook for Planning and Administering Programs. Lexington, MA: D.C. Heath & Company, 1983.

Steinbrook, R., Lo, B., Moulton, J., Saika, G., Hollander, H., and Volberding, P.A. Preferences of homosexual men with AIDS for life-sustaining treatment. N. Engl. J. Med. February 13, 1986, 314(7), pp. 457-460.

Steinbrook, R., Lo, B., Tirpack, J., Dilley, J.W., and Volberding, P.A. Ethical dilemmas in caring for patients with the acquired immunodeficiency syndrome. Ann. Int. Med. 1985, 103, pp. 787-790.

Stoddard, S. Hospice Movement--A Better Way of Caring for the Dying. New York: Stein & Day, 1978. 266 p.

Stout, J.K., Williams, J.M. Comparison of two measures of burnout. Psychol. Rep., 1983, 53, pp. 283-289.

Strauss, L. The effect of an ongoing bereavement group program in support of independent living. Milit. Med., 1980 Dec., 145(12), p. 849-50.

Sussman, M.B. The family life of old people. In: R. Binstock and E. Shanas, eds. Handbook of Aging and the Social Sciences. New York: Van Nostrand Reinhold Co., 1976.

Swerdlow, M. Anesthetic measures in the pain of malignancy. Int. Anesthesiol. Clin., 1983 Winter, 21(4), p. 97-116.

Szabo, R.S. Letter to the editor. Annals of Internal Medicine. 1986 Mar., 104(3), p. 448.

Takeda, F. Japaneses field-testing of WHO guidelines. PRN Forum. 1985 May-Jun, 4(3), p. 4-5.

Tamlyn, D.L., Caty, S. Positive results from a death education seminar. Aust. Nurses J., 1984 Feb., 13(7), pp. 47-49, 52.

Tax Equity and Fiscal Responsibility Act of 1982 (PL 97-248, 3 Sept. 1982). United States Statutes at Large 96, pp. 324-707.

Tehan, C. Has success spoiled hospice? Hastings Center Report. October 1985, 15(5), pp. 10-13.

Terminal dehydration [editorial]. Lancet. Febreaty 8, 1986, 1(8476), p. 306.

Texas Department of Health, Medicare Certification Division, Home Health Care Agencies Rules and Regulations §§115.1-115.12 (1984).

Thompson, E.L. How accurate is the prognosis? Davis, CA: Yolo Hospice, 1986.

Timmer, E.J., Kovar, M.G. Expenses for hospital and institutional care during the last year of life for adults who died in 1964 or 1965--United States. Vital Health Stat. (22), 1971, vol. 11.

Traska, M.R. No home means no home care for AIDS patients. Hospitals. January 5, 1986, 60(1), pp. 69-71.

Travis, T.A., Noyes, R. Jr., Brightwell, D.R. The attitudes of physicians toward prolonging life. Int. J. Psychiatry Med., 1974, 5(1), p. 17-26.

Twycross, R.G. Choice of strong analgesic in terminal cancer: diamorphine or morphine?. Pain, 1977 Apr., 3(2), pp. 93-104.

Twycross, R.G. Clinical experience with diamorphine in advanced malignant disease. Intern. J. of Clinical Pharmacology, Therapy, and Toxicology (Munchen), 9(3):184-198, 1974.7.

Twycross, R.G. Hospice care--redressing the balance in medicine. J.R. Soc. Med., 1980 Jul., 73(7), p. 475-81.

Twycross, R.G., Lack, S.A Therapeutics in Terminal Cancer. London: Pitman Publishing, Ltd., 1984. 207 pp.

Twycorss, R.G., Wald, S.J. Long-term use of diamorphine in advanced cancer, pp. 653-61. In: Bonica JJ et al., eds. Advances in Pain Research and Therapy. New York: Raven Press, 1976, W1 AD706 v. 1, 1976.

Twycross, R.G., Zenz, M. (Use of oral morphine in incurable pain). Anaesthesist., 1983 Jun., 32(6), p. 279-83.

USDHHS/HCFA Medicare Hospice Benefit Program Evaluation. HCFA Extrannual Report. September 1987.

Vachon, M.L.S. Myths and realities in palliative/hospice care. The Hospice Journal, Spring 1986, 2(1), pp. 63-79.

Vachon, M.L. Staff stress in care of the terminally ill. QRB, 1979 May, 5(5), p. 13-17.

Vachon, M.L.S. Grief and bereavement following the death of a spouse. Can. Psychiatr. Assoc. J., 1976, 21, pp. 35-44.

Vachon, M.L.S., Lyall, W.A.L., Rogers, J., Freedman, K., Freeman, S.J.J. A controlled study of self-help intervention for widows. Am. J. Psychiatry, 1980, 137(11), pp. 1380-1384.

Van Buren, L. Hospice home care: a cost analysis of a sample of patients seen during 1980. Home Health Rev., 1981 Sep., 4(2), pp. 10-13.

Veatch, R. Death, Dying, and the Biological Revolution. New Haven, CT: Yale University Press, 1976.

Veatch, R.M. An ethical framework for terminal care decisions: a new classification of patients. J. Am. Geriatr. Soc., 1984 Sep., 32(9), p. 665-9.

Veatch, R.M. Death and dying: the legislative options. Hastings Cent. Rep., 1977 Oct., 7(5), p. 5-8.

Veatch, R.M., Tai, E. Talking about death: patterns of lay and professional change. Ann. Am. Acad. Pol. Soc. Sci., 1980 Jan. (447), p. 29-45.

Ventafridda, V., Tamburini, M., Selmi, S., Valera, L., and DeConno, F. The importance of a home care program for patients with advanced cancer pain. Tumori. October 31, 1985, 71(5), pp. 449-454.

Ventafridda, V., DeConno, F. (The role of neurolytic therapy in blocking cancer pain). Minerva Med., 1984 Jun 8, 75(24), p. 1463-8.

Vernon's Texas Civil Statutes, Article 4447U, §4 (1979).

Vickery, A.M. Life after COBRA. NHO Hospice News, April 1986, 4(4), pp. 4-5.

Videka, Sherman L. Coping with the death of a child: a study over time. Am. J. Orthopsychiatry, 1982, 52, pp. 688-698.

Vincent, P.A. and Garrison-Peace, H. Do hospice nurses differ from non-hospice nurses? Some similarities--and differences. Am. J. Hosp. Care. 1986 Jan./Feb., 3(1), pp. 41-42.

Vinogradov, S. and Thornton, J.E. Case studies: "If I have AIDS, then let me die now!" Commentary. Hastings Center Report. 1984 Feb., pp. 24-25.

Vogel, R.J. and Palmer, H.C. (Eds.). Long-Term Care: Perspectives from Research and Demonstrations. Washington, DC: U.S. Government Printing Office, 1983.

Volberding, P.A. The clinical spectrum of the acquired immunodeficiency syndrome: implications for comprehensive patient care. Ann. Int. Med. 1985, 103, pp. 729-733.

Volberding, P. and Abrams, D. Clinical care and research in AIDS. Hastings Center Report. 1985 Aug., pp. 16-18.

Wachtel, T., Masterson-Allen, S., Reuben, D., Goldberg, R., and Mor, V. The end stage cancer patient: terminal common pathway. Cancer, submitted for publication, 1986.

Wachtel, T.J., Mor, V. The use of transfusion in terminal cancer patients: hospice versus conventional care setting. Transfusion, 1985 May/Jun., 25(3), pp. 278-279.

Wade, E.V., Jain, R. Nutritional support: enhancing the quality of life of the terminally ill patient with cancer. J. Am. Diet. Assoc., 1984 Sep., 84(9), p. 1044-5.

Wales, J., Kane, R., Robbins, S., Bernstein, L., Krasnow, R. UCLA hospice evaluation study. Methodology and instrumentation. Med. Care, 1983 Jul., 21(7), p. 734-44.

Walsh, T.D. Oral morphine in chronic cancer pain. Pain, 1984 Jan., 18(1), p. 1-11. (Review).

Walsh, T.D., Saunders, C.M. Hospice care: the treatment of pain in advanced cancer. Recent Results Cancer Res., 1984, 89, p. 201-11.

Wan, T.T.H. and Arling, G. Differential use of health services among disabled elderly. Research on Aging, 5:411-431, 1983.

Wandelt, M.A., Pierce, P.M., Widdowson, R.R. Why nurses leave nursing and what can be done about it. Am. J. Nurs., 1981 Jan., pp. 72-77.

Wanzer, S.H., Adelstein, S.J., Cranford, R.E., Federman, D.D., Hook, E.D., Moertel, C.G., Safar, P., Stone, A., Taussig, H.B., vanEys, J. The physician's responsibility toward hopelessly ill patients. N. Engl. J. Med., 1984 Apr 12, 310(15), p. 955-9.

Ward, A.W. The impact of a special unit for terminal care. Soc. Sci. Med., 1976 Jul-Aug., 10(7-8), p. 373-6.

Washington Administrative Code §§248-31-001 - 248-31-160 (1985).

Watts, D.T., Cassel, C.K. Extraordinary nutritional support: a case study and ethical analysis. J. Am. Geriatr. Soc., 1984 Mar., 32(3), p. 237-42.

Webster, R. Palliative care for cancer patients. Med. J. Aust. December 9-23, 1985, 143(12-13), pp. 547-548, 550.

Weingarten, H.R. Impediments to communication in transition to terminal illness. Death Educ., 1981 Winter, 4(4), p. 369-83.

Weisman, A.D. Psychosocial considerations in terminal care. In: Psychosocial Aspects of Terminal Care, Bernard Schoenberg, Arthur C. Carr, David Peretz, and Austin H. Kutscher, eds. New York: Columbia University Press, 1972, p. 162-172.

Weisman, A.D., Worden, J.W. Psychosocial analysis of cancer deaths. Omega, 1975, 6(1), p. 61-74.

Weisman, A.D., Worden, J.W., Sobel, H.J. Psychosocial screening and intervention with cancer patients. Boston: Final report of the Omega Project, 1980.

Weiss, S.M., Worthington, P.H., Prioleau, M., Rosato, F.E. Home total parenteral nutrition in cancer patients. Cancer, 1982 Sep 15, 50(6), p. 1210-3.

Weissert, W.G. Seven reasons why it is so difficult to make community-based long-term care cost effective. Health Services Research 20(4):421-433, 1985.

Wellisch, D., Landsverk, J., Guidera, K., Pasnau, R.O., Fawzy, F. Evaluation of psychosocial problems of the homebound cancer patient: I. Methodology and problem frequencies. Psychosom. Med., 1983 Mar., 45(1), p. 11-21.

Werner, P.T., Chard, P.S., Hawkins, C., Marshall, T. The selection and training of volunteers for a rural, home-based hospice program. Patient Couns. Health Educ., 1982 4th Quarter, 3(4), p. 124-31.

West, T.S. Drug control of common symptoms in the terminally ill patient. S. Afr. Med. J., 1977 Mar 26, 51(13), p. 415-8.

West Virginia Legislative Rules, Chapter 16-5I, Series 54 (1986).

White, M., Grisham, M. The Structure and Process of Case Management in California's Multi-Purpose Senior Services Project: Final Report. Berkeley, CA: University of California, 1982.

Whitman, H.H., Lukes, S.J. Behavior modification for terminally ill patients. Am. J. Nurs., 1975 Jan., 75(1), p. 98-101.

Wilhelm, M.E., Wilhelm, M.A. Hospice development in a subacute care setting. Hosp. Prog., 1984 Feb., 65(2), p. 42-5, 74.

Wilkes, E. Dying now. Lancet, 1984 Apr 28, 1(8383), pp. 950-952.

Wilkes, E. Quality of life: effects of the knowledge of diagnosis in terminal illness. Nurs. Times, 1977 Sep 29, 73(39), p. 1506-7.

Wilson, D.C. The viability of pediatric hospices: a case study. Death Educ., 1982 Fall, 6(3), p. 205-12.

Wilson, D.C., English, D.J. An Assessment of the Existing Staffing Patterns and Personnel Required in a Hospice to Deliver Interdisciplinary Patient Care and the Problems Related to Delivering Humanistic Care to Hospice Patients. Assessment report, 1980 July. 198 p.

Winkenwerder Jr., W. Ethical dilemmas for house staff physicians. The care of critically ill and dying patients. JAMA. December 27, 1985, 254(24), pp. 3454-3457.

Winstead, D.K., Gilmore, M., Dollar, R., Miller, E. Hospice consultation team: a new multidisciplinary model. Gen. Hosp. Psychiatry, 1980 Sep., 2(3), p. 169-76.

Witzel, L. Behaviour of the dying patient. Br. Med. J., 1975 Apr 12, 2(5962), p. 81-2.

Wood, B.G. Interpersonal aspects in the care of terminally ill patients. Am. J. Psychoanal., 1975 Spring, 35(1), p. 47-53.

Worden, J.W. Bereavement. Seminars in Oncology. December 1985, 12(4), pp. 472-475.

Yalom, I.D., Greaves, C. Group therapy with the terminally ill. Am. J. Psychiatry, 1977 Apr., 134(4), p. 396-400.

Yancik, R. Coping with hospice work stress. J. Psychosocial Oncol., 1984 Summer, 2(2), p. 11-20.

Yasko, J.M. Variables which predict burnout experienced by oncology clinical nurse specialists. Cancer Nurs., 1983, 6(2), pp. 109-116.

Yukna, B.J. Symptomatic control of the terminally ill: practical approaches with 250 patients. Md. State Med. J., 1980 Jun., 29(6), p. 59-60.

Zimmer, J.G., Groth, Juncker A., McCusker, J. Effects of a physician-led home care team on terminal care. J. Am. Geriatr. Soc., 1984 Apr., 32(4), p. 288-92.

Zimmerman, Jack McKay. Hospice: complete care for the terminally ill. Baltimore, MD: Urban & Schwarzenberg, 1981. 191 p.

Zuehlke, T.E., Watkins, J.T. The use of psychotherapy with dying patients: an exploratory study. J. Clin. Psychol., 1975 Oct., 31(4), p. 729-32.

10 North Carolina Administrative Code §§3T.0101-3T.1002 (1984).

42 Code of Federal Regulations §§418.1-418.405.